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An Address
ON
ARTERIAL SCLEROSIS,
ESPECIALLY IN REGARD TO ARTERIAL HYPERMYOTROPHY AND THE OTHER MORBID CHANGES WHICH OCCUR IN THE MUSCULAR TUNIC OF THE ARTERIES.[1]

Delivered before the Pathological Society of London on Feb. 16th, 1904.

By THOMAS D. SAVILL, M.D. Lond.,
PHYSICIAN TO THE WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM; PHYSICIAN TO THE ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, LEICESTER-SQUARE.

Mr. President and Gentlemen,—These investigations were initiated at the Paddington Infirmary where, during the seven years I was medical superintendent, nearly 500 necropsies were made on persons 60 years of age and upwards, many of whom presented circulatory symptoms during life and some of them died from the semi-invalidism we call old age. The inquiry has been continued, as far as my leisure and eyesight would permit, during the last ten years, making 17 years in all. The opportunity has thus been afforded me to examine not only the visceral arterioles but to pay more attention than is usually devoted to arteries of all sizes and in all positions throughout the body.

Definitions.—I was accustomed to define arterial sclerosis, in my own mind, as a chronic generalised thickening, condensation, or degeneration of the arterial walls, in which, after death, the lumen does not collapse as usual, and the walls are harder and less elastic than normal. Histologically such a condition may occur in three situations—in the tunica media, when it may be properly termed medial sclerosis; in the tunica intima, when it might be called intimal sclerosis; or in the tunica adventitia, when it might be termed adventitial sclerosis. Such a division of chronic arterial disease is more scientific and more in keeping with the division of chronic diseases of the heart into myocardial, endocardial, and pericardial respectively, each being in some degree clinically and pathologically separable from the other and each being of very different relative importance. In regard to atheroma (a patchy fibroplastic infiltration of the intima) those who make many necropsies on the bodies of the aged can, I think, have very little doubt that atheroma and intimal sclerosis (the generalised thickening just referred to) are two totally distinct pathological conditions (Table I.), as Dr. William Russell[2] and others have already pointed out. Atheroma is apt to be confused histologically with the obliterative endarteritis of syphilitic and other origin which occurs for the most part in younger subjects, but it ought not to be confused with intimal sclerosis which is more generalised. Some atheroma can always be found in the bodies of persons aged 60 years and upwards who may have died without circulatory symptoms or accidents of any kind, as in the woman aged 100 years, to whom I shall refer directly, and the conclusion has been forced upon me that atheroma is of no serious pathological importance provided the cardio-vascular system is otherwise fairly healthy. The evil results sometimes attributed to atheroma—in the brain, for instance—can very often be accounted for by the yielding of the vessel wall *between* the patches and the kinking of the artery which ensues.

Table I.—*Showing the Distinction between*—

Atheroma.	Intimal Sclerosis.
Patchy localised fibroplastic infiltration of intima prone to undergo necrotic changes.	Fibrous thickening of the intima entire with little, if any, tendency to necrosis.
Raised *yellow* spots or patches located on one side of an artery. These can be felt as beaded thickenings during life when the superficial arteries are affected.	Not a raised patch but a more or less uniform thickening all round the lumen of an artery without alteration of colour. Affects a considerable length of a vessel which may give to it a smooth hard feel like whipcord, not a beaded thickening.
Affecting chiefly the aorta and the *larger* arteries of the trunk and brain. May be of very limited extent. Very often met with at the bifurcation of vessels even in quite healthy subjects.	May affect arteries of any size but relatively more common in the medium and smaller vessels, usually affecting a considerable vascular area and often found in association with arterial dilatation.

In regard to adventitial and intimal sclerosis I have met with many cases in which it could be legitimately inferred that chronic adventitial and intimal sclerosis of the larger and medium-sized arteries had been secondary both in time and importance to changes in the media or (as Thoma first pointed out) to dilatation of the arterial lumen. A distinction should, I think, be drawn between intimal sclerosis in the peripheral (microscopic) arterioles on the one hand and intimal sclerosis in the medium-sized and larger arteries on the other. Their causes appear to be distinct, and certainly their effects are, for the former may obstruct large areas of the peripheral circulation but the latter is mainly supporting, compensatory, and protective. In relation to this subject I would dissent from the inference sometimes drawn that because intimal sclerosis exists in the arterioles of the kidney it also exists in the other peripheral arterioles. This is by no means so in my experience and the kidney constitutes only a small portion of the whole peripheral circulation of which the voluntary muscular system constitutes a very large part, and it does not appear right that too much attention should be concentrated on the visceral arterioles, or on the microscopic arteries at the expense of those of larger size. In this paper I propose, however, to direct my attention chiefly to the morbid changes in the muscular tunic of the arteries and to deal, first, with the relative importance of the muscular coat; secondly, with the morbid changes met with in the muscular tunic; and, thirdly, with the pathological condition which I have previously described as arterial hypermyotrophy, its causes, and its consequences. The data on which these investigations have been based consist of cases under my care during life (often for several years) and examined after death at the Paddington Infirmary. Clinical and pathological details will be submitted of 29 cases (out of 257 necropsies in 19 months) in which definite circulatory symptoms or accidents without valvular disease or any sufficient explanation other than their arterial condition were observed during life.

The Relative Importance of the Muscular Coat.

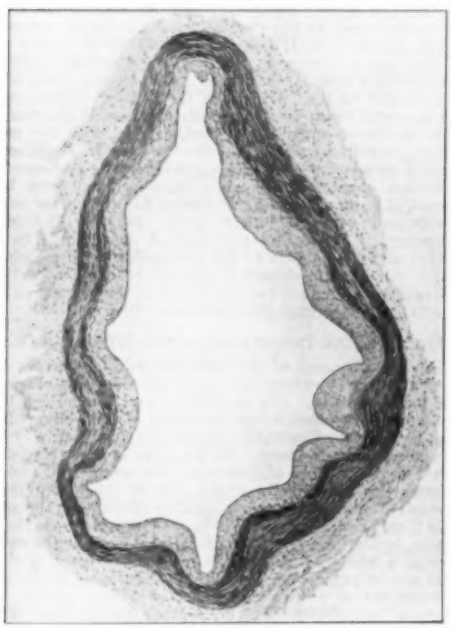
The muscular coat of the arteries is relatively to the other two tunics the most important histologically, physiologically, and pathologically. The muscular tissue forms the thickest tunic of all the arteries and arterioles of the body, only excepting arteries of quite the largest size in which very little muscular tissue is found. In the arteries and arterioles it forms about half the thickness of the vessel wall and constitutes the functionally active part of the entire arterial system. The intima is only a limiting membrane; the adventitia is only a supporting structure of connective tissue; but the media, by the exercise of its functions, controls the circulation as a whole as well as the quantity of blood in this or that area or organ. These muscular fibres form, in short, the parenchyma or proper tissue of the arterial system. But whereas imperfections in the parenchyma of other physiological systems only affect the functions of that particular organ, any imperfection of the muscular coat of the arteries affects directly or indirectly the nutrition and oxygenation of all the organs and tissues of the body and disturbs not only the equilibrium between the different systems but also that important equilibrium between the heart and arteries on which the perfect health and life of every individual depend. We also know, thanks to the observations of Dr. George Oliver and others,[3] that the regulator functions of the arteries are of vital importance not only to the vascular area they supply but to that wonderful power of adaptability to the different positions of the body which is indispensable to the dynamic equilibrium of different parts of the peripheral circulation, and therefore it is not surprising to find that postural vertigo is among the most prominent symptoms when the muscular coat loses its elasticity, contractility, or regulator powers. The older authors regarded old age as a loss of

[1] Being the opening of a discussion on arterial sclerosis.
[2] The Lancet, June 1st, 1901, p. 1519.
[3] Dr. George Oliver: On Pulse Gauging; London, 1895, p. 22, et seq. Dr. Leonard E. Hill: The Physiology and Pathology of the Cerebral Circulation; London, 1896.

balance of functions and this was probably true in regard to the equilibrium between heart and arteries. But the most important constituent of incipient old age, in my view, is the loss of the regulator function of the arteries.

Turning to the pathological aspect, we know that extensive valvular disease of the heart or of the endocardium may exist without inconvenience so long as the muscular wall is healthy and we also know that fat may be deposited outside the heart and fibrosis amounting even to obliteration of the pericardial cavity may exist without very seriously affecting its action as long as the muscular tissue is healthy. Similarly in my experience widespread atheroma or intimal sclerosis on the one hand, or a marked adventitial sclerosis or peri-arterial fibrosis on the other has existed in many cases without manifesting any clinical or pathological consequences provided the tunica media be fairly healthy. As one among many illustrations of these statements the following case may be mentioned, the case of a woman who died in the Paddington Infirmary at the age of 100 years in October, 1890. Her mental and bodily powers became very gradually weaker and she passed away with no definite evidences of active disease either before or after death excepting hypostatic congestion of the lungs and a certain degree of pulmonary fibrosis so commonly present in the bodies of aged persons, accompanied by a few spots of incipient broncho-pneumonia

FIG. 1.



Radial artery (stained with logwood, × 35) of a woman, aged 100 years, showing, as in the other arteries of this case, a perfectly healthy tunica media; the artery is dilated and the media *proportionately* thinned. The artery also shows intimal and adventitial sclerosis, which, in this case, I regard as compensatory to the dilatation. This case exhibited extremely widespread atheroma but no circulatory complications at any time.

latent during life. She was under observation for many months and during life there was no history or evidence of any derangement of the circulatory system. After death the naked eye and microscopical examination (upwards of 50 sections of the arteries and organs were examined) revealed: 1. Widespread atheroma of the systemic and cerebral arteries reaching a degree that I have rarely seen. It was found not only in the larger vessels, where it is usual in persons over 60 years of age, but also in the medium-sized and smaller vessels throughout the body and even in the ultimate ramifications of those of the brain. In the arch of the aorta one or two atheromatous patches were breaking down into what are sometimes called atheromatous ulcers, but there had been no embolism, thrombosis, or vascular rupture of vessels in any part of the body or brain. 2. The lumen of all the arteries of the body was increased to one and a half and in some of the larger arteries—e.g., the common iliac—to two and a half times the normal size. 3. The heart was small, not hypertrophied or dilated, and microscopically, excepting for moderate periarterial fibrosis and the usual brown atrophy of old age, it was normal. Besides the patchy atheroma there was in this case (4) generalised intimal sclerosis (diffuse thickening of the intima) and (5) generalised condensation and thickening in the adventitia (adventitial sclerosis), both of which changes may, I believe, in this case be regarded as secondary to, and compensatory of, the arterial dilatation. But (6) *the muscular tunic of the arteries presented practically no change*, especially when we consider her age (Figs. 1 and 2). Some degree of granular changes existed in the lower extremities, but not more than I have met with in many persons of half her age. The thickness of the media was diminished but careful measurements showed it to be strictly in proportion to the dilatation which existed. (Specimens of the organs and the cardio-vascular system were exhibited at the meeting of the Pathological Society.) It is surprising what grave disease of the intima may exist without at any rate local consequences. Here, for instance, is the anterior tibial artery of a woman (Case 67[4]) who died at the age of 81 years from an intercurrent malady (epidemic skin disease). The lumen of the vessel was narrowed by an atheromatous patch undergoing necrosis to only one-tenth of the normal, yet no circulatory effects or accidents occurred in the limb.

These cases are only two of many that could be quoted as supporting the conclusions: (1) that extensive patchy atheroma and even generalised intimal and adventitial sclerosis are quite consistent with extreme longevity and with the total absence of circulatory symptoms, accidents or complications, provided, firstly, the tunica media be relatively free from hypertrophy or disease, and secondly, the balance between the heart and arteries is not disturbed; and (2) that moderate generalised disease of the muscular tunic is a serious potential evil. A slight and hardly measurable increase in the muscular tunic, spread over the entire arterial system, must have a very considerable influence on the dynamics of the circulation and on the nutrition of the body generally. Arterial hypermyotrophy is, however, only a starting point to muscular degeneration in many cases.

MORBID CHANGES MET WITH IN THE MUSCULAR TUNIC.

Muscular tissue occurs in all but the very largest arteries The changes I have met with in the muscular tunic (apart from lardaceous disease, which hardly comes within the scope of arterial sclerosis) are atrophy, hypertrophy, cloudiness, and granular degeneration (which are always more or less generalised throughout the arterial system), and necrosis and calcification (which are mostly localised and limited). The methods of revealing these are given in the schedule of cases submitted.[5]

1. True *atrophy* of the tunica media, that is to say apart from the thinning due to dilatation of the calibre of the arteries, I have only met with as an accidental condition. A slight degree of amyotrophy was sometimes found after death from prolonged wasting disorders. Thus atrophy was met with in three emaciated cases dying from chronic pulmonary tuberculosis out of four examined, in two cases of chronic pyelitis, and in one of scirrhus of the pylorus. The atrophy or thinning of the media appeared in all of these instances to be due to a wasting of the protoplasm of the muscular fibres as judged by the undue approximation of the neighbouring nuclei.

2. *Hypermyotrophy* (Figs. 3 and 4)—i.e., an increase in the number or volume of the muscular fibres of the arteries, resulting in an increased width of the media, with or without some of the other changes about to be mentioned, was of very frequent occurrence. The almost universal occurrence of a slight degree of hypertrophy in the bodies of persons past middle life led me at one time to infer that some degree of hypertrophy of the media might be normal in advancing years just as hypertrophy of the heart has been

[4] These numbers refer to a schedule of cases published in the Transactions of the Pathological Society, 1904.

[5] Transactions of the Pathological Society of London, 1904.

shown to occur in the aged.[6] But the measurements are too refined and the conditions for which allowances have to be made, such as the size of the lumen of a vessel, are too numerous for anyone to be able to dogmatise on a general proposition of this kind and I gladly admit the correctness of Professor Clifford Allbutt's[7] valuable criticisms on this point. Hypermyotrophy is possibly the first stage of all the morbid changes about to be mentioned. At any rate, in all the cases I have examined I have never met with nebular or granular degeneration or necrosis without some degree of the former (after allowing for the dilatation or contraction present) though hypermyotrophy was sometimes met without the degeneration. Hypermyotrophy and its other consequences will be referred to more particularly later.

3. *Cloudy* or *nebular degeneration* of the muscular fibres (Fig. 3) consists of a faint cloudy condition of the protoplasm mostly accompanied by enlargement of the fibres. With logwood and other ordinary stains slighter degrees of this cloudiness are not revealed but with neutral orcein the faintest degree becomes manifest. When treated in this way the tunica media of the lower limbs of nearly all persons examined past middle life showed some slight cloudy changes. Cloudiness in the protoplasm apparently commences in the innermost layers of the tunica media, for it was always most marked in this situation.

4. *Granular degeneration* (Fig. 3), like the preceding, predominated in the inner layers of the tunica media. It occurred together with cloudy changes in many transitional forms and is probably an advanced stage of the latter. The tunica media in granular degeneration is brittle and more difficult to mount, the muscular fibres lose their outline, their protoplasm breaks up into fine granules, and later the muscle nuclei also break up. This granular condition seems to me to correspond in some respects (its usual areas of distribution in the arterial system, for instance) with the "diffuse arterio-sclerosis" described by Thoma.[8]

Dilatation of an artery, local or general, was often associated with either of the two preceding changes, and with it there may be an *apparent* thinning of the media. Both the adventitia and intima of such dilated arteries were, in my experience, as in the case of the woman aged 100 years, almost invariably denser and thicker than normal, and this adventitial and intimal sclerosis should, I think, be regarded as compensatory and conservative conditions. Probably dilatation itself is in a sense a conservative process in cases of persistent high tension.

5. *Necrosis* of the media consists of local spots or foci of amorphous débris which take a very dark stain with aniline or logwood. The parts of the artery on each side of a focus may be quite healthy in some cases (e.g., Case 42) and such a focus is then very easily overlooked, while in other cases the media is also the seat of cloudy granular changes.

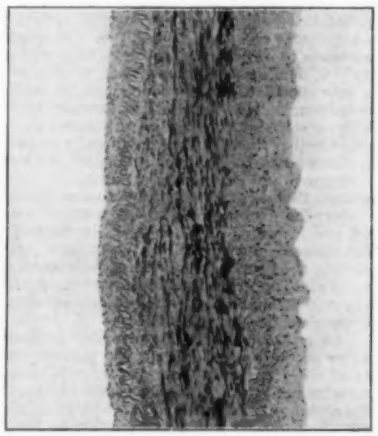
6. *Calcification* of the media was not so common as the preceding changes. It was met with in the later stages of arterial disease in two forms. Sometimes it was seen in the form of plates which had apparently succeeded the necrotic changes just referred to. These plates must not be confused with the more common atheromatous plates in the intima (particularly of the bigger vessels) which may encroach on, but do not originate within, the media—a fact which can be revealed by the use of acid orcein to define the boundaries of the tunics. A second variety of calcification takes the form of spicules surrounding the lumen of an artery which appear to be due to a transformation into calcareous material of swollen muscular fibres or bundles of fibres. These spicules were apt to be more generalised than the plates and might (as in a man aged 66 years) render entire lengths of various arteries as rigid as gas-pipes. Both necrosis and calcification are fairly common in the popliteal artery even when the rest of the arterial system is fairly healthy.

Fibrosis—i.e., a replacement or transformation of the tunica media into fibrous tissue—I have never seen. Unstained, insufficiently stained, or badly prepared specimens (e.g., by their remaining too long in Müller's fluid or in too strong alcohol) may present a very striking resemblance to fibrous tissue both to the naked eye and under the microscope. But adequate preparation and staining have always brought out the characteristic rod-shaped nuclei of involuntary muscular tissue between the internal and external boundaries (as defined by acid orcein) of the tunica media. The media may of course be encroached on and apparently dilated and thinned by dense fibrous intima, as in the renal arterioles of some cases of chronic interstitial nephritis.

It is not possible to give statistics as to the relative frequency of these several changes because they were so commonly associated in varying degree in the same patient. Hypertrophy, cloudy changes, and granular degeneration of the media are undoubtedly generalised changes such as would arise from nutritional, dynamic (e.g., high tension), or toxæmic causes. They were always generalised in their distribution, though apt to predominate in some vascular area, very often in the arteries of the lower extremities—a penalty perhaps for man's erect posture. But focal necrosis and plates of calcification were local and limited in their

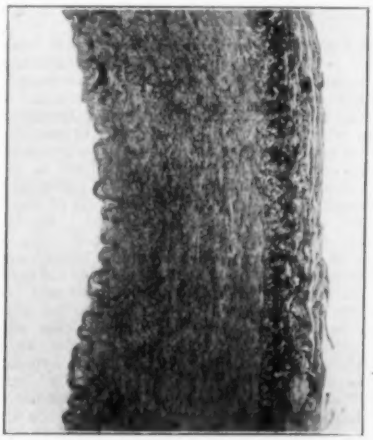
[6] Boyle: Proceedings of the Royal Society, 1861.
[7] THE LANCET, May 1st, 1897, p. 1235.
[8] Various papers scattered through Virchow's Archiv, 1883–1889.

FIG. 2.



Brachial artery (× 60) of a woman, aged 100 years, the same patient as Fig. 1, showing normal tunica media for comparison with the following case, Fig. 3. It also shows the intimal and adventitial sclerosis alluded to in the text.

FIG. 3.



Brachial artery (× 60) of a man, aged 73 years, showing arterial hypermyotrophy, with commencing granular degeneration in the inner layers and nebular changes in the outer layers of the media.

occurrence and might be met with in any, often in the most unexpected, parts of the arterial system. They resembled the results of injury (as in the popliteal where they are so common) or the blocking of the capillary area of the vasa vasorum. The effects of these two sets of changes are also somewhat different. The consequences of arterial hypermyotrophy, cloudy and granular degeneration, the generalised changes, were primarily to disturb the dynamics of the circulation and the nutrition (e.g., the elasticity and contractility of the vessels and the cardio-vascular balance). The effects of the necrosis, on the other hand, were local and led to rupture and hæmorrhage. Necrosis of the media, which was not infrequently associated with arterial hypermyotrophy, if unaccompanied by compensatory adventitial or intimal thickening, appeared to be one of the most insidious and lethal of medial degenerations (Fig. 6). It might be present in one or two spots in an arterial system which, excepting for hypertrophy, might be otherwise absolutely normal. Consequently these spots are very difficult to find, but my belief is that they exist (in association with arterial hypermyotrophy) in a large proportion of cases of cerebral hæmorrhage. Such an association was found in at least four of the six cases of cerebral hæmorrhage among the 30 cases submitted. It may have been overlooked in the other two in spite of the most careful search.

ARTERIAL HYPERMYOTROPHY.

Arterial hypermyotrophy was a term I first used in 1891[9] and again in 1897[10] to describe an increased thickness of the muscular tunic of the arteries due to an increase in volume or number, or both, of the individual muscular fibres. A numerical increase is very difficult to determine. The question whether an increased volume or swelling of the individual muscular fibres is to be called a hypertroph is an important one. I still regard the condition as primarily a genuine muscular hypertrophy, just as an increased thickness of the cardiac wall in which some or all of the muscular fibres are swollen is also so regarded. My subsequent researches with acid and neutral orcein have, however, revealed a certain cloudiness of the protoplasm of the muscle in some cases in which other stains did not reveal it. This nebular condition, as I have just mentioned, is probably the earliest stage of degeneration. But the fact of degeneration having commenced by the time a case reaches the post-mortem room does not negative the existence of hypertrophy. In point of fact, arterial hypermyotrophy must be regarded—an opinion shared by Dr. William Russell[11]—as being the first step to most medial degenerations, the earliest phase of medial sclerosis, the first change when a strain is thrown on the arteries; hence the importance of its recognition.

Arterial hypermyotrophy, as thus histologically defined, constitutes, in my experience, a distinct clinical and pathological condition of prolonged course, capable of recognition during life by careful investigation,[12] characterised in the first stage mainly by "postural" vertigo and other symptoms of high and unregulated blood pressure; in the second stage mainly by the evident thickness of the arteries, cardiac hypertrophy, and sometimes by cerebral or other hæmorrhage; and in the final stages by the various circulatory and nutritional disturbances which may ensue. Sometimes, but not necessarily, it is associated with chronic renal disease, which is only one amongst many of its causes and it constitutes in itself one of the main pathological conditions on which cerebral and other hæmorrhages depend and on which the incipient phenomena of "senile decay" also depend. During the 19 months June 1st, 1890, to Dec. 31st, 1891, there were 257 necropsies made at the Paddington Infirmary. 23 of these 257 cases were patients who had presented circulatory symptoms or accidents during life but who had no cardiac valvular disease. It was the combination of these two circumstances which induced me specially to investigate the arterial system. The muscular tunic of every one of these cases was increased in thickness, in many it was associated with other morbid changes in the media, and in some cases with abnormalities in the other arterial tunics. Two similar cases (No. 41, a case of accidental death, and No. 42, an interesting case of arterial hypermyotrophy in which the patient died in the Paddington Infirmary in the spring of 1892) are added to this list, making 30 in all. Clinical and pathological details of these cases and the methods adopted in the examination are given in the appendix.[13] Measurements were made of the muscular and other arterial coats by means of an eye-piece micrometer; the lumen was also measured and allowed for. Upwards of 1500 microscopic specimens of arteries were examined, measured, and compared with normal specimens, an average of 50 sections to each case, taken from arteries of various sizes of the limbs, abdomen, thorax, and head, as well as the arterioles of the viscera. These 30 cases have been arranged in two groups. Group A comprises 17 cases in which the arterial hypertrophy was *relatively* uncomplicated by other arterial disease and by less advanced degeneration of the tunica media. Group B comprises 13 cases in which the arterial hypermyotrophy was complicated more or less with advanced degeneration, dilatation, or other arterial disease—viz., intimal or adventitial sclerosis or atheroma. These cases represented the later stages.

The difficulties of an inquiry such as this were considerable. 1. The universal distribution of the arterial system makes these examinations most tedious and prolonged and the extensive dissections required often prevent one getting permission from friends. 2. Two or three sections of an organ will give you a good general idea of its morbid changes, but this is not so in the arterial system when 50 sections sometimes seem inadequate. 3. The minuteness of the measurements render the greatest care and precision necessary. 4. The state of contraction or dilatation of an artery is only one of the many conditions for which allowance has to be made in measuring the muscular tunic. If an artery is in a state of contraction the media is, of course, thickened, whether there be hypermyotrophy or not, and the intima is thrown into folds; if it is dilated the media is, of course, thinned and the intima stretched. No medial measurements therefore are of much value unless the calibre of an artery as compared with a normal specimen is measured and recorded. 5. Considerable difficulty is very often experienced, especially in degenerate arteries, in distinguishing the boundaries of the middle coat, and after trying auric chloride, nitrate of silver, and many other stains I found in acid orcein an ideal stain which brought out into marked prominence the elastic layer of Henle and the increased quantity of elastic tissue which is found in the inner layers of the adventitia. 6. But perhaps the greatest difficulty of all consisted in securing a normal standard from which measurements and comparisons could be made. In my search for a normal standard I found, as already mentioned, that there was certainly a minute variation in the thickness of the tunica media in various conditions, both in health and disease. After examining several bodies in which death occurred from acute or chronic disease, at last I procured some specimens from persons who had died from accident in the midst of apparent health.

As examples of arterial hypermyotrophy I will refer to three cases which represent the three stages of the disorder: (1) simple hypermyotrophy; (2) hypermyotrophy with incipient degeneration; and (3) hypermyotrophy intimal and adventitial sclerosis.

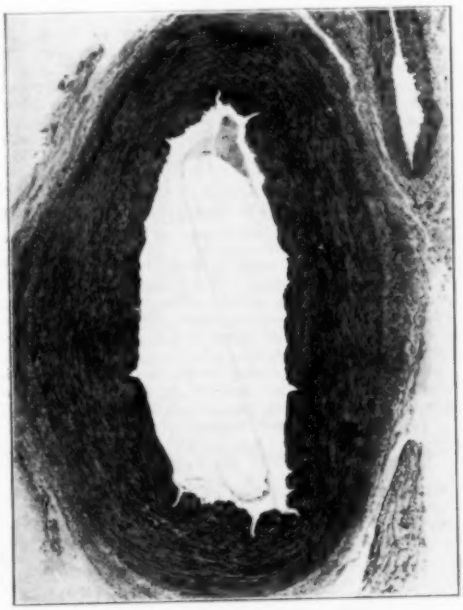
1. In the course of my search for a normal standard I had, by the courtesy of Dr. Danford Thomas, the opportunity of examining the body of a man, aged 30 years, who was riding his bicycle across Oxford-circus when he came into violent collision with the shaft of a four-wheeled cab, which smashed his ribs into his liver, and he died in 12 hours. The case may be regarded as being one of arterial hypermyotrophy in its earliest phase when the media is free from degeneration of any kind. The average of 40 specimens of arteries and organs examined in this case showed an increased thickness in the muscular tunic of the arteries of $\frac{3 \cdot 3}{2 \cdot 5}$. The heart was slightly hypertrophied and weighed 11½ ounces and the muscular tissue was quite healthy. All the other organs were normal. After some difficulty I traced his wife who informed me that he had always seemed quite healthy but complained a good deal of headaches. I am glad to have been able to exhibit this case because arterial hypermyotrophy is not very often met with in the post-mortem room in such an early and unmixed condition. There was, as far as I could tell with the means

[9] Annual meeting of the British Medical Association, 1891 (Pathological Section).
[10] Transactions of the Medical Society, vol. xx., p. 271; and Brit. Med. Jour., Jan. 23rd, 1897, p. 183.
[11] THE LANCET, June 1st, 1901, p. 1519.
[12] Brit. Med. Jour., Jan 23rd, 1897, p. 188.
[13] Transactions of the Pathological Society of London, 1904.

at my disposal, a numerical increase in the muscular fibres but this young man's arteries (e.g., the radial and anterior tibial) also revealed an increased thickness of the individual fibres. I have sometimes been asked if such thickening does not indicate degeneration rather than hypertrophy. Now, the individual fibres of all contracted arteries are thickened and I have repeatedly seen the same thickening with or without contraction in normal arteries taken from young and perfectly healthy subjects; there is a remarkable variation in this respect within the range of health. True degeneration is revealed by granular (and perhaps cloudy change) or other definite changes in texture.

2. The following case (Case 42) may be regarded as a fair example of arterial hypermyotrophy terminating at a relatively early phase of the disorder in cerebral apoplexy. A man, aged 56 years, was admitted into the Paddington Infirmary on April 14th, 1892, for left hemiplegia, which had come on suddenly while he was at work the day before without loss of consciousness. The praecordial dulness was

FIG. 4.



Radial artery (stained with logwood, × 35) from a man, aged 56 years, who died from cerebral hæmorrhage, and whose case is described in the text. This, like all his other arteries, shows marked arterial hypermyotrophy; the measurements are given in the text. For comparison with *Fig.* 5. The other coats were healthy throughout the body.

FIG. 5.

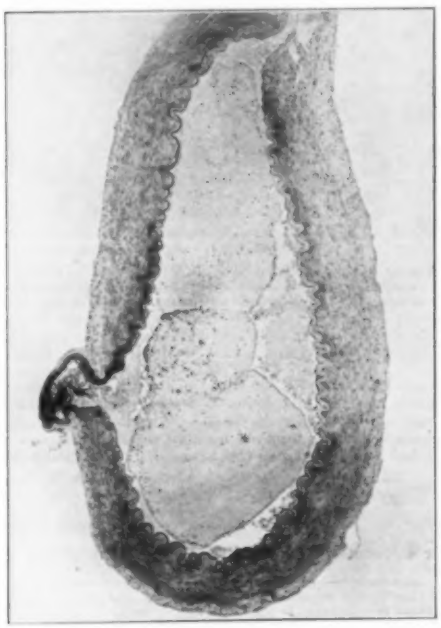
Normal radial artery for comparison with the preceding (stained with logwood and weak nitrate of silver solution to bring out the boundaries of the middle coat, × 35).

extended and the apex beat was forcible. The pulse was full, the arterial tension was high, and it was noted by one of my colleagues that "the artery feels like whipcord." The abdominal organs were natural. There was incontinence of urine but some was collected and it was noted as being copious, clear, pale, acid, specific gravity 1020, with no albumin or sugar. We were informed that his mother had incurred a stroke of paralysis down one side, followed by death two years later, and that one sister was in an asylum. His brother, aged 58 years, had previously been in the infirmary for "bronchitis" and there was a note in our records that he also had "whipcord-like arteries" and complained of "giddiness when he stooped." The patient's previous history revealed that he had taken both beer and spirits in fairly liberal quantities but not to what was regarded as excess. He had suffered from "bronchitis" from time to time. For the past two years he had been troubled with swimmings and giddiness in the head, especially after stooping, had complained of a good deal of headache, occasional breathlessness, and depression of spirits. The next evening (April 15th) he became comatose and died at 3 o'clock the following morning without fresh symptoms. At the necropsy nothing of importance was found excepting in the vascular system. The right kidney weighed four ounces and the left four and a half ounces; microscopically they were quite normal, excepting that the arterioles stood out and remained patent. Microscopically the media of the arterioles was thickened but the parenchyma was perfectly normal. The heart weighed 13 ounces and its walls were notably hypertrophied and slightly dilated. The muscular tissue appeared normal to the naked eye and under the microscope. The valves were perfectly healthy. A naked-eye examination of the arteries showed that the radials and all the other arteries of similar and smaller size were slightly contracted, with the single exception of the dorsalis pedis on both sides, which was dilated, and that the muscular coat of *all the arteries* was notably thickened even after allowing for the slight diminution of calibre. The brachials, radials, and femorals were tortuous, showing an increase of the media in length as well as in thickness. Microscopically, sections of over 50 different arteries were examined and measured, the average measurements being, calibre $\frac{18}{20}$, media $\frac{4{\cdot}5}{2{\cdot}5}$, adventitia $\frac{2}{2}$, and intima $\frac{1}{1}$.[14] The increase in the muscular tissue was most marked in the lower extremities; the average was $\frac{5{\cdot}7}{2{\cdot}5}$, that of the upper

[14] These figures represent divisions of the eye-piece micrometer. The upper measurement is the actual measurement of the artery under examination; the lower represents the measurement of a normal corresponding artery. In the case of averages the averages of the numerator and those of the denominator were worked out respectively. I started to work out the value of these micrometer divisions in terms of millimetres, but the gain seemed hardly commensurate with the labour, for the fraction already expresses a ratio of abnormal to normal.

extremities and abdomen being $\frac{4 \cdot 1}{2 \cdot 5}$ and the splenic artery $\frac{4 \cdot 0}{3 \cdot 0}$. In the radial (Fig. 4) the thickening of the media was very marked, the measurements being $\frac{20}{20}$, $\frac{5 \cdot 5}{2 \cdot 5}$, $\frac{2}{2}$, and $\frac{1}{1}$. The muscular tissue of the arteries appeared to be normal and free from degeneration excepting a moderate degree of cloudy swelling in the inner layers of the media in the arteries of the lower extremities. In the arterioles of the viscera the muscular tissue was increased, but less than in the arteries of the limbs and abdomen. A slight amount of intimal thickening could also be observed in the arteries of the lower extremities. Elsewhere the tunica intima was normal. The adventitia was not notably increased or condensed anywhere (excepting perhaps in the radial and dorsalis pedis arteries). The cerebral vessels appeared to be remarkably healthy both to the naked eye and microscopically and I was at a loss to know why this patient should get hæmorrhage in this situation. There were no atheroma and no thickening in any of the coats to be detected. The media was perhaps slightly increased but the increase was hardly measurable. Nevertheless, in the centre of the brain, which was otherwise quite healthy, there was a recent blood clot of about the size of a hen's egg, occupying the right internal capsule. These were the results of going twice over the specimens of more than 50 arteries. When all the arteries are simply too thick why should they rupture? The most obvious explanation was that the marked hypermyotrophy of the systemic arteries and the heart threw an extra strain on the relatively unhypertrophied arteries of the brain, and I think this explanation is sufficient, or partly sufficient, to account for many cases of apoplexy. But on further search of additional sections I came across a minute (microscopic) necrotic focus in the tunica media, surrounded on all sides by healthy muscular tissue, in four situations, one in a section of the radial, one in an arteriole in the kidney, one in the basilar artery, and one in a section of the middle cerebral artery (Fig. 6) which was bulging. I think it is safe to infer that this man's cerebral hæmorrhage came through such a bulging. But one meets with other cases of medial necrosis without cerebral hæmorrhage, therefore the cardio-arterial hypermyotrophy and its consequent high tension must, I think, still be regarded as the main cause of the cerebral hæmorrhage in this case. It is in many ways a most instructive one, uncomplicated as it was with any renal disease and unmixed to any extent with intimal or adventitial sclerosis or with those extensive degenerative changes in the media which so often supervene (e.g., Cases 58 to 70[15]) before the patient reaches the post-mortem room.

FIG. 6.



Middle cerebral artery (logwood stained, × 40) of a man, aged 56 years; the case is described in the text. There was, as usual in the cerebral arteries in cases of arterial hypermyotrophy, only very slight hypertrophy of the media. But a minute focus of necrosis has resulted in bulging, such as would give rise, when combined with high tension, to the hæmorrhage from which he died.

3. The third case, taken from among many similar ones, illustrates the final stage of arterial hypermyotrophy when degeneration, dilatation, and intimal and adventitial sclerosis had supervened (Fig. 3). A man, aged 73 years, had been many years in the workhouse and was for four and a half years under observation in the Paddington Infirmary. Since the age of 59 years he had been subject to vertigo, especially on any change of posture, *which was at first relieved by nitroglycerine*. At the age of 71 years the vertiginous attacks were replaced by attacks of syncope, sometimes even while he lay in bed. He died suddenly in one of these syncopal attacks at the age of 73 years. The kidneys (the total weight of which was nine and a half ounces) and other organs were healthy and the urine was always normal. The heart was hypertrophied, the weight being 19 ounces. The brachial artery compared with that of the patient aged 100 years, whom I have already alluded to, depicts the muscular increase (Figs. 2 and 3). The calibre of these two arteries was the same and therefore their tunics are strictly comparable. The patient's hypermyotrophy was widespread, more marked in the lower and less marked in the upper half of the body, and least marked in the brain. Some degree of degeneration of the media existed in the lower parts of the body; there was cloudiness in the upper. Dilatation (average $\frac{27}{20}$) and tortuosity with some degree of intimal and adventitial sclerosis existed, most marked in the larger arteries and those of the lower limbs. Some atheroma existed in the largest vessels only. In all the other cases submitted with this paper the leading symptoms during life were circulatory, and the leading change after death was cardio-arterial hypertrophy, many of them, as already explained, being mixed when they reached the deadhouse with degeneration or other conditions. For instance, in Case 48 (Group A), a man, aged 65 years, a case of senile vertigo, who died from cardiac failure, the tunica hypermyotrophy, which amounted in some places to $\frac{6 \cdot 1}{2 \cdot 5}$, was associated with marked dilatation (amounting sometimes to $\frac{47}{20}$) and some generalised intimal sclerosis. In Case 60 (Group B), a woman, aged 76 years, a case of chronic interstitial nephritis, who died from uræmia, the hypermyotrophy averaged $\frac{4}{2 \cdot 5}$ and was associated with some degeneration and dilatation in the larger arteries and contraction in the smaller arteries. In Case 70 (Group B), a man, aged 75 years, a case of giddy, fainting, and cyanotic attacks, who died from "senile decay," the hypermyotrophy was associated with degeneration, dilatation, and slight generalised intimal sclerosis.

In all the 30 cases which are submitted the muscular coat of the arteries was increased in thickness, even after making allowance for any dilatation or contraction of the vessel. Microscopic measurements showed that the average increase in the muscular tissue of the arteries of the 17 cases in Group A was nearly 50 per cent.—i.e., one and a half times the normal. The greatest average increase was $\frac{5}{2}$ and the smallest $\frac{7}{5}$ of normal. In Group B the average was about 31 per cent. The increase in the muscular coat had in most instances taken place in length as well as in thickness, so that the artery had become tortuous. A thickened tunica media when fairly marked can after a little practice be detected by the naked eye or with the aid of a one inch Codrington lens. The vessel loses some of its pliability, remains unduly patent, and does not collapse as a normal artery does. The media may even project beyond the intima and adventitia as though their connexions were loosened. Histologically the change I am referring to is not a fibrosis even in the arteries and arterioles, for the rod-shaped nuclei could always be revealed when the section was

[15] See Appendix in the Transactions of the Pathological Society of London, 1904.

efficiently and thoroughly prepared (see schedule of cases[16]). As regards *distribution*, I found that the radial artery might be regarded in most cases as a tolerably fair sample of the thickness of the muscular tunic throughout the arterial system, though by no means of its condition as regards degeneration. The media of the arteries of the lower extremity was nearly always more hypertrophied (and presented a more advanced stage of degeneration) than those of the upper extremities, and these latter were more affected than those of the brain. The different arteries of a limb might vary considerably among themselves both as regards thickness and degeneration. The middle coat of the cerebral arteries was often quite normal in thickness. The major distribution in the lower extremities suggests the explanation that gravity throws more strain upon these latter and that the relative exemption of the cerebral arteries was due to the same cause. Dr. Oliver's and Dr. Hill's observations[17] support this view. This relative exemption of the cerebral vessels from the thickening of the media probably helps, as previously mentioned, to explain the frequent occurrence of cerebral hæmorrhage in cases of arterial hypermyotrophy.

1. Among the *causes of arterial hypermyotrophy* the first question which claims our attention is its relation to chronic renal disease. The late Sir George Johnson[18] first demonstrated muscular hypertrophy in the systemic arteries and arterioles of the kidney in association with chronic renal disease and this has been confirmed by others.[19] Undoubtedly chronic renal disease is very constantly accompanied and followed by arterial hypermyotrophy. This, indeed, is what one would expect from the high blood pressure which is so usual in renal disease. But chronic renal disease cannot be regarded as the only cause of arterial hypermyotrophy, for out of the 30 cases submitted only nine could be classed as suffering from chronic renal disease—four out of 17 in Group A (Cases 43, 46, 51, and Case 44 who presented alcoholic fatty degeneration of all organs[20]) and five out of 13 in Group B. In the remaining two-thirds (21 cases) there were no urinary changes during life and no evidence of renal disease after death. It is now universally admitted that a slight degree of fibrosis in all organs is normal and usual in the aged, but this is not likely to be mistaken for incipient interstitial nephritis, especially when the urine has been normal during life and the weight and macro- and micro-scopic characters of the kidneys are natural. Since the days of Mahomed, Ewald, and others (1881) the meaning of the term "chronic Bright's disease" has by some been extended so as to connote sometimes primary renal disease followed by arterial thickening and at other times a generalised morbid condition characterised by persistent high arterial tension, various circulatory and nutritional defects, associated or followed with more or less indefinite evidences of renal disease. I wish in the first place to protest against the name of Bright being applied to any but cases exhibiting definite evidences of renal disease during life and after death. Such a confusion is undesirable and unnecessary. Secondly, I would submit that the *generalised* clinical condition to which I have just referred as being called by some chronic Bright's disease corresponds anatomically with cardio-arterial hypermyotrophy and its consequences, and clinically with the senile hyperpiesis described by Professor Clifford Allbutt[21] or some other form of high tension, with its concomitant circulatory and nutritional defects. Thirdly, my investigations prove that although chronic renal disease is a potent agent it is not by any means the only cause of arterial hypermyotrophy.

2. Hypertrophy of the heart may well be regarded as in some way causally related to arterial hypermyotrophy; either may be the cause of the other or both may be the product of a common cause. It existed in all of the 17 cases of Group A, the average weight being 13·9 ounces, two being as high as 19 ounces. In none of these did any valvular disease exist, six cases of arterial hypermyotrophy with cardiac valvular disease having been excluded from the list on this account. In Group B the average weight of the heart in the 13 cases was 12·5 ounces, one being as high as 17·5 ounces. In persons whose ages were mostly over 60 years it is not to be expected that the heart though hypertrophied will always be free from degenerative changes. Nevertheless, in 13 the microscopic structure was healthy or exhibited only the "brown atrophy" of the aged. Fatty degeneration existed in three cases, fibroid degeneration in six cases, and some granular degeneration in ten cases; the pericardium was adherent in three cases. The leading fact to be derived from these data is that the heart is practically always hypertrophied in cases of arterial hypermyotrophy. Conversely, my belief is that if the arterial system were oftener investigated in cases of *cardiac* hypertrophy some *arterial* hypermyotrophy also would be found and much light thus be thrown upon the subject. It is only natural that the opposing forces of the heart and arteries should act and react on each other. But which of these first hypertrophies or whether, as seems possible, they both start at the same time and, finally, which first begins to give way and to degenerate and to dilate must, generally speaking, be matters of conjecture.

3. High arterial tension, sometimes intermittent but usually persistent, has existed in all the cases of arterial hypermyotrophy which I have observed before arterial dilatation or degeneration has occurred and in many cases after this has taken place. This was estimated by the finger and pulse tracing in all but a few cases which were seen after Hill and Barnard's instrument had come into use for clinical work. It is not possible to obtain evidence of the high tension having existed antecedently to the occurrence of any arterial hypermyotrophy, but in view of the well-known fact that excessive functioning, in health at any rate, produces overgrowth and the frequency with which the known causes of high tension could be revealed in the history of the cases submitted it seems extremely probable that high arterial tension is the main cause of arterial hypermyotrophy. For instance, in the 17 cases in Group A there was a history of alcoholic excess in seven, of gout in two, of passing gravel or lithates in six, chronic renal disease existed in three, and in the remaining case there was no information of value on the point. My belief is that these figures represent approximately the truth about the matter and that alcohol in anything more than medicinal doses plays the leading rôle in this and other medial changes, sugar in excess perhaps coming next.

4. Heredity and age no doubt play their part in causation. But the information before us is not sufficient to draw any very definite conclusions. The average age at death of 16 out of the 17 cases in Group A (excluding Case 41 who died from accident) when they reached the post-mortem room was 66·5 years, but this is no guide as to when the condition supervened. It may have existed 10 or 20 years in some, two or three in others; many had had symptoms for years. Three died at 38, 42, and 56 years of age from cardiac failure, uræmia, and cerebral hæmorrhage respectively; the remainder were over 60 years of age when they died. In Group B the average age at death was 74·5 years. These were cases in which the media presented marked degeneration and which were complicated by other arterial disease.

The *consequences* of arterial hypermyotrophy seem to be mainly the same as those of high arterial tension—namely, hypertrophy of the heart and subsequent degeneration of the cardio-arterial system, with disturbance of the functions of all organs. Cardiac hypertrophy has already been alluded to. 1. Undoubtedly one of the most serious consequences is cerebral hæmorrhage; it occurred in four cases in Group A and two in Group B. This seemed to be due not so much to the hypermyotrophy in the media of the cerebral arteries themselves as to the relative immunity of these vessels. Arterial hypermyotrophy being most marked in the systemic arteries, the rigidity of these vessels throws a strain on the least protected part and any excessive cardiac hypertrophy undoubtedly contributes to this end. Further, when describing Case 42 I alluded to the possibility of minute foci of necrosis which might easily be overlooked, also forming an important factor in cerebral and other hæmorrhages. It will be noticed that hæmorrhages in other situations than the brain, epistaxis, dermal hæmorrhage, frequently arose in several of the cases, more particularly in Group B, cases in which degenerative changes in the arteries were most marked. Cerebral accidents other than cerebral hæmorrhage occurred in only one case in Group A and in four cases in Group B. 2. Reference has already been made to various degenerative changes in

[16] Transactions of the Pathological Society of London, 1904.
[17] Loc. cit.
[18] Brit. Med. Jour., 1870, vol. i., p. 381; Transactions of the Royal Medical and Chirurgical Society, 1873, and elsewhere.
[19] Professor Hamilton: Text-book of Pathology; Dr. W. H. Dickinson: The Baillie Lectures, THE LANCET, July 30th, 1895, p. 136; and others.
[20] Transactions of the Pathological Society of London, 1904.
[21] THE LANCET, Jan. 17th, 1903, p. 170.

the media which supervene on arterial hypermyotrophy. 3. A certain degree of fibrosis of organs was present in all the cases, particularly perivascular fibrosis. Sometimes it was very slight and ill marked. This seems in some measure to be a normal, or at least a usual, occurrence in advancing years, but its presence also in cases of hypermyotrophy under 60 years of age has led me to regard it as a usual sequence of arterial hypermyotrophy. 4. If the patient escapes cerebral or other accidents, if the heart compensates sufficiently but not excessively, and if the arterial hypermyotrophy and degeneration be not excessive, or if a certain degree of compensatory arterial dilatation occurs it would seem as if the patient may live for many years and even to a good old age. It is uncompensated or over-compensated hypermyotrophy which seems to be the chief potential evil. It will be seen that intercurrent diseases account for 13 cases, senile decay and asthenia for eight, cardiac failure and syncope for three, cerebral hæmorrhage for four, and uræmia for two.

The *clinical phenomena* have been incidentally referred to above and on a previous occasion.[22] They consist mainly of progressive asthenia, with various circulatory symptoms and especially vertiginous sensations produced by variations in posture. In all the 30 cases submitted a definite history of postural vertigo, fainting sensations, or other postural circulatory symptoms existed, excepting in Case 43, in which dyspnœa was the most prominent symptom, and Case 41 who was not under observation during life. The three conditions with which arterial hypermyotrophy are apt to be confused are old age, granular kidney, and other forms of arterial sclerosis or arterial degeneration. Granular kidney is, as we have seen, not infrequently an associated pathological condition, occurring like it in the latter half of life; this fact and the one which Sir William Broadbent [23] and others have pointed out—namely, that a generalised arterial contraction (such as that which is apt to occur in arterial hypermyotrophy) may of itself give rise to copious urine of low specific gravity with an occasional trace of albumin—do not render the diagnosis easier. The difficulty of distinguishing arterial hypermyotrophy from senile decay is also considerable, because arterial hypermyotrophy and its sequelæ constitute, if my observations and inferences be correct, some of the main causal factors in senility. Other forms of arterial sclerosis are so frequently associated with, and secondary to, arterial hypermyotrophy that it is hardly possible to distinguish them clinically. In regard to the *prevalence* of arterial hypermyotrophy, judging by an infirmary experience, the morbid condition would seem to be a relatively frequent one. It will be seen that 29 cases were met with out of 257 necropsies in the space of 19 months. The *treatment* of arterial hypermyotrophy cannot be discussed here, but two points merit reference. First, the marked effect of vaso-dilators such as nitro-glycerine in the early stages of many of the cases submitted indicates a genuine muscular hypertrophy. A purely degenerative change could not be modified in this way. Secondly, the conclusion has been forced upon me that if one could prevent hypermyotrophy of the arteries one could prolong life. Hypertrophy of the muscular coat of the arteries is but the first step to senile decay.

In conclusion my main contentions are—1. That the pathology of the different tunics of the arterial system should be studied separately, just as are the different coats of the heart. 2. Careful histological methods and a large number of specimens are necessary before generalisations can be made; neutral and acid orcein stains are valuable aids. 3. That advanced atheroma and a considerable degree of intimal and adventitial sclerosis may exist without serious consequences and be compatible with extreme old age provided the muscular tunic is unaffected. 4. The prime importance of the muscular tunic relatively to the intima and adventitia, in that it constitutes the functionally active structure of the arterial system and the regulator mechanism of the whole body. 5. The existence of arterial hypermyotrophy as a substantive generalised change in the arterial system. 6. The importance of its recognition by reason of the potential evils in the way of circulatory derangement, circulatory accidents, nutritional disturbances, disturbance of the balance between the heart and arteries, and the degenerations, which are apt to ensue. 7. It is the first step towards senile (or generalised) decay and is the main cause of senile or postural vertigo at any age. The combination of arterial hypermyotrophy and focal necrosis of the media is a most deadly one and may produce death by hæmorrhage at a comparatively early age (e.g., Case 46, aged 39 years). 8. Arterial hypermyotrophy may result from chronic renal disease, but it has many other causes, all of which probably produce the condition by high arterial tension.

[22] Brit. Med. Jour., vol. i., p. 188, 1897.
[23] On the Pulse, Cassell and Co., London, 1890, p. 153.

FEVER IN CHILDREN CAUSED BY THE INDIGESTION OF CERTAIN KINDS OF CARBOHYDRATE FOODS.[1]

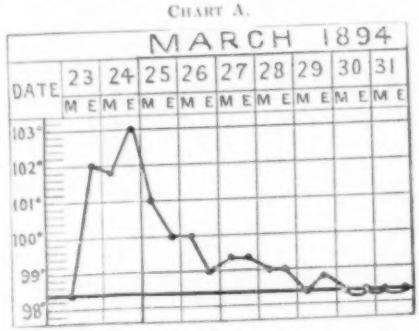
BY HENRY DAVY, M.D., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL DEVON AND EXETER HOSPITAL.

ALTHOUGH the cases which I shall bring before you have been well described by Dr. Eustace Smith in his large work on "Diseases of Children" under the head of "Acute Febrile Gastric Catarrh" they do not seem to me at all recognised by the large majority of the medical profession. Even members of our profession who have written largely on diseases of children do not recognise these cases and many regard the dietary which Dr. Smith recommends for them as a peculiar fad of that eminent physician.

I will first relate at some length the case of my own son and I will then mention shortly several other similar cases which I have had under careful observation since I came to recognise the condition. Now, in common with most medical men, I do not attend members of my own family. I was, of course, aware that my boy was constantly having febrile attacks which prevented his close attendance at school. I knew that he had attacks of "febricula," or "influenza," or a "feverish cold," which required his staying in bed for a few days, but I did not regard them with any alarm and looked upon them as attacks which we could not help. It was only in the year 1898, when after whooping-cough the attacks became alarmingly severe, that both his medical attendant, Dr. J. Mortimer, and myself began to be exceedingly uneasy about him. With the help of my wife's diary and other notes I am able to make an accurate account of quite a number of attacks and I will now place these before you.

The patient was born in March, 1887, and was a very healthy baby. When two and a half years old he had a severe attack of croup and from this time up to March, 1894, when he was seven years old, he frequently suffered from "colds," during which he had a "croupy cough" and was feverish; but I have no accurate record of the temperature during these attacks. During the years 1894, 1895, 1896, and 1897 I have more or less accurate records of ten or 11 attacks of fever lasting two or three days and then more or less subsiding. The accompanying charts show the course of the temperature in attacks which occurred respectively in March, 1894, and in December, 1896. Nearly

CHART A.

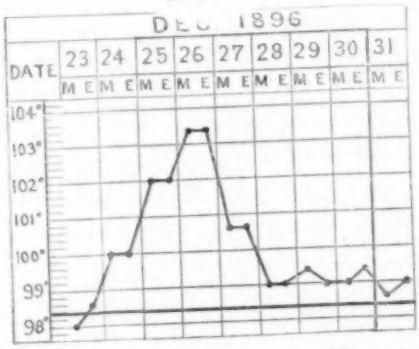


all these attacks began in the same way so that one description will do for all. The boy nearly always came down to breakfast, as far as one could say, well. He took

[1] A paper read at a meeting of the South-Western Branch of the British Medical Association held at Barnstaple on March 30th, 1904.

an ordinary breakfast, an egg, fish, or bacon, sometimes oatmeal; in fact, I am not sure that he did not always have a small plate of oatmeal at this time. He finished up with jam or honey. Then he went off to school directly after breakfast walking or running about half a mile. On the days the attacks took place he would come back about

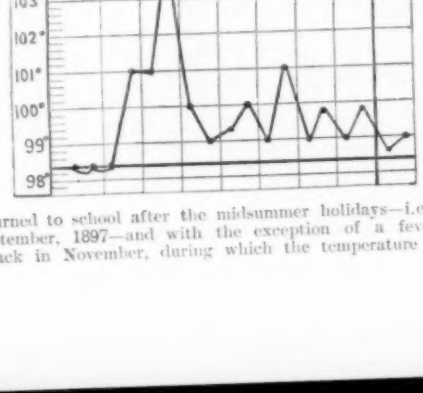
CHART B.



one o'clock usually complaining of nothing, occasionally complaining of "headache." He invariably looked flushed and on taking his temperature it would be 101° or 102°, or occasionally 103° F. He was then put to bed on a milk diet. After a varying number of hours he would burst out into a perspiration and the temperature would fall to 99°. Occasionally it rose again the next day; more often it continued low and more or less quickly went back to normal. In 1897 a more severe phase of the same kind of thing occurred. On April 16th, 1897, he developed whooping-cough. His cough was very violent and he was kept in two rooms of the same temperature with a cresoline lamp burning almost continuously. On May 11th he seemed fairly well. On the evening of this day, however, he became suddenly ill, being intensely flushed with a temperature of 104·2°, a pulse of 150, with cold extremities, and much collapse. He was given a dose of castor oil and put to bed and he appeared so ill that both his mother and myself sat up with him all that night. At about 2 A.M. on the 13th he sweated profusely and his temperature fell to 99°. The next morning his bowels acted and he seemed quite well when seen by Dr. Mortimer at 11 A.M., the temperature was 99°, and the pulse was 80. Later in the day (the 13th) after dinner at 2 P.M. he again became very ill. The pulse was 150 and the temperature was 104·6°. This passed off with a profuse perspiration but his temperature remained about 99° for a week or ten days.

About a fortnight after this the boy was sent to Seaton and was there about a month; he seemed to get on all right and his temperature whilst there was not observed. He

CHART C.



returned to school after the midsummer holidays—i.e., in September, 1897—and with the exception of a feverish attack in November, during which the temperature was once 102° but of which I have no accurate record, he did fairly well. He went to school on Jan. 22nd, 1898, apparently well, for we stopped taking his temperature as much as possible. On Jan. 29th he returned from morning school flushed, with a temperature of 100° which the next day rose to 104°; it subsided to 100° after a perspiration but did not reach normal. He went to London to see a physician on Feb. 24th. The opinion this physician wrote me was:—

"I have been somewhat delayed in sending a line about your boy. I have got a letter to write to —— about a similar case and it seems to me they are very common: children who from time to time have fits of fever that last a few days and then depart leaving no evident ill-effect behind. Now of course these attacks may be tuberculous fever but experience seems to teach that they are not. And they are not like it, for they are ephemeral and to my eye they always indicate a temperament rather than a disease. I never look upon them with anxiety, for they disappear as the child adolesces. What replaces them may be a question of some interest but I cannot answer it. All I *know* is that these attacks occur in nervous excitable children and I believe they are the correlatives (may I say) of convulsion, sick headache, and any other nerve storm. If the attacks are recurring frequently I advise nux and arsenic and I think with advantage. If they are only seldom I say let alone, for medicine does not seem to have any notable effect under such circumstances. I do not think it is any use keeping such cases from school for the mere purpose of shielding them from attacks, but in the present case your boy is young; a little holiday will do him good and a few weeks in the country will set him up, particularly if he be put on a pony and kept out in the air all day. This will quite accord with my idea of treating such cases, which is to make them as robust as possible, and so prevent this susceptible state of their heat centre from remaining in its somewhat imbecile condition."

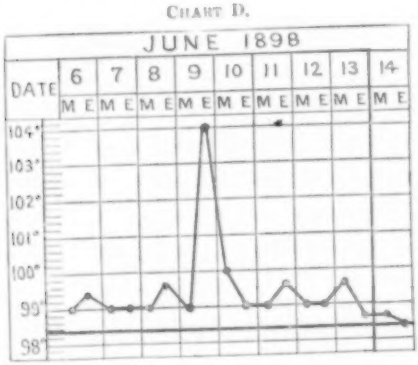
After this letter and after consultation between Dr. Mortimer and myself we decided to send him to school and to observe his temperature carefully. He went to school on March 2nd, 1898, his temperature the preceding day being 99° at 5 P.M. The following is the record for the next six days of the morning and evening temperature: March 3rd, morning 98·4°, evening 99°; 4th, morning 97·4°, evening 99°; 5th, morning 98·8°, evening 99·6°; 6th, morning 99°, evening 99·6°; 7th, morning 98°, evening 99·6°; and 8th, morning 99·6°, evening 100°.

After further consultation with Dr. Mortimer we decided to send the boy to Sidmouth for the Easter holidays with two other boys as playfellows. They lived more or less out of doors and his temperature was recorded. He returned from Sidmouth apparently well, went to school on March 28th, and the following records of his temperature were taken. The day before going to school (March 27th) the morning temperature was 98° and the evening was 98·2°. The record of the temperature for the next seven days is as follows: March 28th, morning 98°, evening 98·2°; 29th, morning 98°, evening 98°; 30th, morning 98°, evening 99°; 31st, morning 99°, evening 99·4°; April 1st, morning 99·4°, 1 P.M. 102·2°, 7.30 P.M. 101·4°; 2nd, morning 99°, 1 P.M. 99°, 7.30 P.M. 99°; and 3rd, morning 99°, 1 P.M. 98·4°, 7.30 P.M. 99°. He was allowed to get up on April 3rd but he looked ill as if he had had a severe illness. After consultation with Dr. Mortimer and correspondence with the London physician who had seen him it seemed desirable for a time at any rate to keep him away from school and to try to cure his "imbecile heat centre" by letting him run wild and get robust. He was sent first to his grandfather's in Somersetshire and then on May 12th to a cottage at Budleigh Salterton. He thoroughly amused himself with boating and fishing and seemed fairly well in himself, but though all this time he was thin he did not gain any weight and he never had an appetite. His temperature at Budleigh Salterton was usually 99·4°, 99·6°, or 100° at some part of the day. On June 9th, whilst at Budleigh Salterton, he had his last attack of fever. He appeared well in the morning and had for breakfast fish, bread-and-butter, jam, and weak tea; for dinner chicken, asparagus, potatoes, and milk pudding; for tea, sponge cake, bread-and-jam, and weak tea. After tea he seemed flushed, his temperature was found to be 104°, and he seemed even more ill than usual. I was telephoned for and on seeing him at 11.30 P.M. I found his temperature 104·2°, the pulse was 160, and the boy

was very ill. The next morning his temperature was 100° and at midday 99°.

The question now was could anything more be done for him. All his future prospects were being ruined by his continued absence from school and although he had now been running wild for some months his "heat centre" was

CHART D.



apparently as "imbecile" as it had ever been. In the course of the previous year I had discussed the condition with quite a number of medical men whom I had met in consultations and no two of them had ever agreed as to the diagnosis. The most thought that there was some obscure tuberculous condition which we could not find, some thought it was worms, while one very eminent throat specialist kindly offered to operate on him for adenoids, as he had known several cases in which similar attacks of fever had disappeared after this operation. I determined that I would take the boy quite independently to two eminent medical men and if they differed in opinion to ask a third to review their decision. He first saw Dr. Eustace Smith, who entered fully into his case, examined him thoroughly, and said that he considered it all a question of "acute gastric catarrh" due to diet, and he gave the following dietary. The following were to be avoided: beef, starchy puddings, jam, honey, marmalade, &c., fruit, raw and cooked, potatoes, turnips, carrots, sweet cakes, and oatmeal porridge. The following were allowed: beef, mutton, birds, fish, bacon, ham, tongue, eggs in any shape, green vegetables, bread and butter; puddings: custard, batter, bread and butter, light suet pudding, pancakes, rusk pudding, blancmange made with gelatin, stewed figs and prunes, and bananas. Dr. Smith also recommended a particular kind of bath. The boy was to sit in water of a temperature of from 100° to 105° and was to be sponged with this. Finally he was to have a douche down his back of water of a temperature of 75° poured out of a jug. He was then to be well rubbed with a towel. Dr. Smith considered that this bath hardened the system and prevented the tendency to catarrh. I next took the boy to Dr. (now Sir Thomas) Barlow, who also fully entered into the case and expressed in almost identical terms the same opinion as Dr. Smith. So much was this the case that both Dr. Smith and Sir Thomas Barlow stated that they did not often see a case in which the fever rose so high as 104° from this cause and both expressed the opinion that the whooping-cough had left the boy's nervous system especially susceptible and that the height of the fever was due to this condition left by the whooping-cough. Sir Thomas Barlow recommended precisely the same diet with one important addition—that we might sometimes give potatoes fried quite dry as chips. He did not mention the bath. I had not expected that the opinions of these two eminent physicians would have so entirely coincided and having an appointment with Sir William Broadbent I took the boy to him. I told him exactly what had taken place and said I thought that I need not trouble him in the matter. He, however, examined the boy carefully, came to the conclusion that there was no evidence of any disease, and agreed with Dr. Smith and Sir Thomas Barlow as to the cause of the attacks.

I returned to Exeter very much gratified by the result of my visit to London. We had at last found out a cause which might account for the "imbecile condition" of the boy's "heat centre." But I confess that I was not yet convinced that we had found the final cause of the fever. In former years I had passed some 18 months as resident medical officer of the Evelina Hospital for Sick Children and I had never recognised such a cause of fever. Amongst others I had discussed the condition with a friend who very recently had been resident at the Hospital for Sick Children, Great Ormond-street, and he was as ignorant on the subject as I was myself. Still we determined to give the treatment a thorough trial; we adopted the diet and the bath and watched the temperature. Within ten days the temperature became normal and there it remained more or less entirely ever since. We sent the boy back to school; at first for half the day, then for the whole day, and he never had another attack. He then went to a boarding school where his dietary could be kept up and he did well. After two years gradually he went back to a fuller diet: to potatoes carefully cooked, to a certain amount of milk pudding, and as he grew older he began to take a certain amount of jam. Then he passed into the Navy and on the *Britannia* he fed exactly like the other boys and he is now a midshipman leading just the ordinary life of the Navy and he is as strong, as well developed, and as good at athletics as any other boy of his age. I said that he never had another attack after his taking this diet. This is not quite accurate, for he had one attack about a year after he commenced it. He then had a good helping of black currant tart with sugar and cream and that evening he had a temperature of 102° which went down the next day. After this his diet was more strictly kept until he went to the *Britannia* (aged 14 years and three months) and he never had another of the attacks. I venture to think that this solitary attack within a few hours of eating the black currant tart, sugar, and cream is of more significance as indicating the dependence of these attacks on certain articles of diet than any other fact which could be put forward.

Now since I have known this cause of fever in 1898 I have met with some eight or nine similar cases of which I have more or less accurate records. In all these cases the children have been much under their proper average weight for their height and age. In every case the stomach has been very much distended. Sometimes there have been definite histories of more or less frequent feverish attacks, whilst in some cases the children have been observed to be flagging and below weight and then the temperature has been observed to be always above normal. In those cases in which attacks of fever have occurred the cause had never previously been recognised. In some cases the attacks were termed influenza, in some febricula, while in one case the child was said to have constantly recurring attacks of bronchitis in which, however, the ordinary symptoms of bronchitis were absent. In those cases in which the children were found to be flagging and under weight the temperature might be observed for some weeks ranging between 99·2° and 100° just as was noticed in my boy's case when at Budleigh Salterton. In every one of these cases the greatest improvement has followed the adoption of the diet recommended by Dr. Smith without the baths which I have rarely, if ever, ordered. As far as I know, a cure has resulted in all these cases, but I have not been able to follow them all sufficiently to state whether the cure has continued altogether.

Very little has been published on this subject; as far as I am aware the only reference to it is in Dr. Smith's large work on "Diseases of Children." I do not, however, quite agree with Dr. Smith's view as to how these various farinaceous foods act. When I saw him with my boy I understood him to hold the view that it was the "actual fermentation of these foods" which did the harm. But in a letter which he was good enough to write to me on Feb. 23rd, 1903, he corrected this view. In this letter he says:

"In these cases I do not attribute the fever to the irritation of fermenting food, although, of course, there is active fermentation going on in the alimentary canal, but to the catarrh, including the liver upset. The latter (the condition of the liver) has, I think, a great deal to do with the rise of temperature, for a dose of calomel or blue pill, which sets the liver working, generally puts a stop to the fever directly it has had time to act. I am constantly seeing cases like your boy and cure them always in the same way. One of the difficulties is to get mothers to realise how sensitive the children become to cold and one has to repeat this to them again and again; for as the child goes on catching cold upon cold—every time becoming more susceptible to chills—he becomes after a few months like a hot-house plant and the slightest exposure at once upsets his

weakly digestive organs. To cure them you have to give them back their normal resisting power to chills and until you have done this they are never safe."

Now, Dr. Smith has such an intimate knowledge of diseases of children in general and of this condition in particular that it is quite likely that the explanation of the fever is as he says. But my experience of my own son's case and of all the other cases in which I have observed the condition leads me to a different conclusion. I believe that the fever is due to an auto-intoxication from the products of fermentation of these particular mixtures of starchy foods. The temperature shows, I think, that the attacks are much more like an autosepsis than a catarrh. Their more or less sudden onset and quick decline after a profuse perspiration appear to me very like what one would expect from absorption of a septic material from the alimentary canal. The fact that in my experience these attacks cease when the particular foods which disagree are stopped, although all the other conditions of life remain the same, seems to show that these particular foods are the actual cause of the attacks. We all know that in very early life young children cannot digest starchy foods, owing to the non-development of the pancreas at this time of life, and observations have been lately published in which at much later periods of life deficient pancreatic digestion has been observed. I am inclined to think that in the cases in which I have observed the fever the pancreatic digestion is not proportionate to the age of the patient. Starchy foods are not properly digested, especially certain starchy foods which by their structure (such as potatoes and carrots) or by their composition (such as combinations of sugar and starch in milk pudding and jams) are especially difficult of digestion. As a result, undue fermentation of these foods takes place in the alimentary canal and causes the fever. As the child grows older the power of his pancreatic digestion increases and so the cause of the fever gradually ceases. The fact that a dose of mercury much assists these cases is, I think, in favour of this hypothesis, for calomel and blue pill are most powerful disinfectants of the bowel.

I would notice one other point. In my boy's case he always seemed worse when attending school. I believe this is entirely to be explained by the fact that he hurried from breakfast to school and that his indigestion was increased by this proceeding. But when his food was altered he still hurried from breakfast to school and yet no attack of fever ever occurred. In cases of fever in children for which no obvious cause can be found it will therefore be advisable to try the effect of the dietary that Dr. Smith and Sir Thomas Barlow recommended for my son.

Exeter.

AN ANALYSIS OF 150 CASES OF DEATH FROM BRONCHO-PNEUMONIA.

BY PERCY HARDY, B.A., M.B., B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.

THE cases under consideration are the total number which occurred, in children under 13 years of age, at the London Hospital from Feb. 1st to Dec. 31st, 1903, and of which post-mortem examinations were made. Drawn, as they all were, from the East-end of London, the children were among the poorest to be found anywhere in England and lived mainly under the most adverse circumstances. The results of this analysis are no doubt very different from those which would be obtained from investigating cases of death from the same disease occurring in children of the middle and upper classes, and this applies especially to the effect of the manner of feeding. I shall endeavour to show in this series that the feeding of the children by bottle instead of at the breast increases the mortality enormously; but it must be remembered that the former method of feeding means in the majority of these cases that the children get—not other milk so prepared that it resembles more or less completely human milk, as would often be the case in children of the middle and upper classes—but anything and everything which their parents eat and which they can be made to swallow. Thus nothing is commoner in the East-end of London than for a mother to answer a question as to the feeding of her infant in arms by saying: "It has just the same as what we have." No cases of acute miliary tuberculosis have been included, and indeed in only four out of the 150 were there any obvious signs of tuberculosis about them, and these were as follows: a caseating nodule at the apex of the left lung in one case, a healed calcareous nodule at the apex of the left lung in one case, and caseating mesenteric glands in two cases. It perhaps is interesting to note in passing that there were no less than 23 of these children brought to the hospital in a moribund condition. I have classified the results thus:—

I.—AGE AND SEX.

1. *Age.*—All of the children were under 13 years of age.

8 under 1 month.*	119 *(carried forward).*
3 between 1 and 2 months.	13 between 2 and 3 years.
9 „ 2 „ 3 „	6 „ 3 „ 4 „
20 under 3 months.	138 under 4 years.
17 between 3 and 6 months.	0 between 4 and 5 years.
18 „ 6 „ 9 „	2 „ 5 „ 6 „
18 „ 9 „ 12 „	3 „ 6 „ 7 „
73 under 1 year.	1 „ „ 8 „
27 between 12 and 18 months.	1 „ 8 „ „
19 „ 18 „ 24 „	1 „ 9 „ 10 „
119 under 2 years.	1 „ 10 „ 11 „
	2 „ 11 „ 12 „
	1 „ 12 „ 13 „
	150

* Of the eight children under the age of one month one was six days old and seven were 14 days old.

2. *Sex.*—85 of the cases were those of males, while 65 were those of females.

II.—CAUSES.

A.—*Predisposing Causes.*

1. *Feeding.*—In counting up the number of breast-fed and bottle-fed children respectively the following has been the principle adopted. A child has been considered breast-fed if he has been reared on the breast for a greater period than four and a half months or, if the child be less than nine months old, for a greater period than half his life; if fed on the breast for less than this he has been considered bottle-fed. The instances in which this rule has had to be followed are:—

Counted as Bottle-fed.

Age.	Breast-fed for—
7 months.	1 month.
8 „	2 months.
9 „	1 month.
10 „	3 weeks.
7 „	6 „
7 „	5 „
9 „	2 „
4 „	3 „

Age.	Breast-fed for—
1¼ years.	3 months.
1½ „	2 „
1¾ „	4 „

Counted as Breast-fed.

10 months.	7 months.
1¼ years.	5 „
2½ „	8 „

On this plan it was found that out of the 64 cases of children under four years of age in which the method of feeding was known 32 were breast-fed and 32 were bottle-fed—that is, the deaths from broncho-pneumonia were equal.

In order to determine the *average* proportion of breast-fed to bottle-fed children for that part of London 78 children who were brought to the hospital, either because of accidents, such as burns, scalds, and the like, or for other reasons than for advice or treatment and including no cases in which they were brought for any *medical* disease, were taken. Of these it was found that nine were bottle-fed—that is, 11·5 per cent.—and 69 were breast-fed—that is, 88·5 per cent. But it has just been shown that the number of deaths from broncho-pneumonia among bottle-fed and breast-fed children is equal. Therefore the ratio of mortality among bottle-fed and breast-fed children is as 69 : 9—that is, *the mortality from broncho-pneumonia is 7·7 times as great in bottle-fed as in breast-fed children.*

2. *Rickets.*—There were well-marked signs of rickets in 25 of the 150 cases, or 16·7 per cent. Of the 95 cases between the ages of six months and three years there were 21, or 22·1 per cent., while of the 59 cases between the ages of one and three years—the rickety period *par excellence*—there were no less than 15, or 25·4 per cent., showing well-marked signs of this disease.

B.—*Exciting Causes.*

1. *Acute specific fevers.*—(*a*) Measles.—In 15 cases the disease occurred during, or followed immediately on, an attack of measles. Of these, four patients were under the age of one year, five were between one year and two years,

three between two and three years, two between three and four years, and one was between six and seven years. (*b*) Diphtheria.—12 cases occurred during an attack of diphtheria. Of these, one patient was under the age of one year, six were between one and two years, two between two and three years, and three between three and four years. (*c*) Whooping-cough.—Of the seven cases in which the child was suffering from whooping-cough two patients were under the age of one year, three were between one and two years, and two were between three and four years.

2. *Meningitis.*—Eight cases occurred during an attack of meningitis. Of these five were of the epidemic cerebro-spinal type while two were those of suppurative meningitis secondary to suppurative otitis media. In one case the skull was not allowed to be opened but the child presented the symptoms and signs of meningitis.

3. *Suppurative otitis media.*—There were five cases of suppurative otitis media, three affecting the right ear alone, not any affecting the left ear alone, and two affecting both ears.

4. *Pyæmia.*—In three cases the broncho-pneumonia was part of a general pyæmia.

5. *Anæsthetics.*—In three of the cases the broncho-pneumonia was thought to be probably due to the administration of an anæsthetic which preceded the attack.

6. *Typhoid fever.*—Two of the children were suffering from typhoid fever.

7. *Scalds and burns.*—There were severe scalds preceding the illness in two instances. In one case, brought in dead, the skin showed signs of a superficial burn which had probably occurred several days previously.

In one case the broncho-pneumonia followed the impaction of a coin in the œsophagus and in another it was secondary to erysipelas. The onset of the illness was marked by an attack of diarrhœa and vomiting in 21 of the cases.

III.—MORBID ANATOMY.

1. *Distribution.*—The right lung was alone affected in nine cases, the left being alone affected in nine cases also. Both lungs were affected in 132 cases.

2. *Variety.*—(*a*) Confluent or massive broncho pneumonia (in which one or more lobes were completely solid and resembled to a greater or less extent lobar pneumonia).—Of this condition there were six instances, one being of the right lower lobe, two of the left lower lobe, and one of both lower lobes. In two cases nearly the whole of both lungs was solidified. (*b*) Suppurative broncho-pneumonia.—Of the 15 examples of suppurative broncho-pneumonia four were associated with suppurative otitis media, four with empyema (of these two with purulent pericarditis also), two with peritonitis, and three were part of a general pyæmia, while one occurred with acute suppurative periostitis.

3. *Coexisting pleurisy.*—(*a*) Acute fibrinous pleurisy.—Of the 15 cases in which this condition was present, in four it affected the right pleura only, in five the left pleura only, and in six it affected both pleuræ. (*b*) Pleurisy with effusion.—i. Serous: This was only present in one instance. ii. Purulent (i.e., empyema): there were 16 cases in which this condition was present, six affecting the right pleura, eight the left pleura, and two both pleuræ.

My sincerest thanks are due to Dr. R. N. Salaman for his kindness in placing all the post-mortem records, which he had so ably classified, at my disposal, and to the members of the staff and registrars of the London Hospital for their permission to use the clinical notes of the cases under consideration.

Nottingham.

A PLEA FOR THE MORE EXTENSIVE USE OF TUBERCULIN AS A CURATIVE AND PROPHYLACTIC MEASURE.

BY ALBERT S. F. GRÜNBAUM, M.A., M.D. CANTAB., F.R.C.P. LOND.,

FORMERLY ASSISTANT PHYSICIAN, LIVERPOOL HOSPITAL FOR CONSUMPTION, ETC.

IN a recent article Dr. C. Spengler of Davos reports two cases, verified by necropsy, of miliary tuberculosis cured with tuberculin. In the German literature it is easy to find records of many cases illustrating the utility of tuberculin as a therapeutic agent. In this country its use for curative purposes is almost in abeyance. I believe this to be a concession to popular prejudice rather than the result of unfavourable experience; indeed, I find that superintendents of sanatoriums have often no experience in the matter. Yet the clinical results more than justify the use, even if it were impossible to give any rational explanation of the action, of tuberculin. But there is every reason for believing that it does stimulate the production of protective bodies against the tubercle bacillus. Although it looks like increasing the dose of poison, the injection of tuberculin is not really contra-indicated by the pre-existence of infection. For at the site occupied by the tubercle bacilli, in a progressing case, the cells are obviously too weak to resist the invader. But the other cells of the body have no opportunity of producing protective substances in the absence of a suitable stimulus, and the tubercle bacillus with its products does not come to them. It is the tuberculin which supplies this stimulus and it has been definitely shown by A. E. Wright that the injection of tuberculin leads to the increase of at any rate one class of protective bodies.

Since its introduction I myself use only the Neu-Tuberkulin (Bacilli Emulsion) of Koch and I proceed according to the instructions supplied with it, avoiding violent reactions. For the first part of the time the patient is kept in hospital; later, when the dose has reached 0·75 cubic centimetre, above which I do not usually go, one injection is given every week in the out-patient room, the patient remaining at home on the following day. But I never repeat an injection until the patient has clinically recovered from the one before. The total period of injections extends over three to six months.

In my own experience I have not seen any other of what may be termed the non-specific forms of treatment produce results approaching those of tuberculin in cases in the same stage of the disease. Many patients, of course, improve or recover under ordinary treatment or in sanatoriums. But such cases lack the specific resistance induced by the tuberculin treatment and easily relapse. The tuberculin treatment, like every other, has also its failures to record, but not, I think, so many, all things being equal, as the sanatorium treatment.

The best method is the combination of tuberculin and sanatorium treatment, first insisted on by Petruschky. But the latter portion is not always available and is expensive; the former can more often be carried out.

Now that the effects of tuberculin can be gauged it would seem rational to use it also prophylactically, especially in cases of obvious tuberculous diathesis, the predisposition of which it may be possible to gauge by Wright's methods. It seems to me from an examination of the evidence that in refusing to make therapeutic use of tuberculin (in suitable cases) the physician assumes the grave responsibility of rejecting one of the very small number of *specific* remedies for disease.

Leeds.

A CASE OF PERFORATED DUODENAL ULCER; OPERATION; RECURRENT HÆMORRHAGE; GASTRO-ENTEROSTOMY; RECOVERY.

BY HERBERT W. ALLINGHAM, F.R.C.S. ENG.,

ASSISTANT SURGEON TO, AND LECTURER ON OPERATIVE SURGERY AT, ST. GEORGE'S HOSPITAL;

AND

REGINALD THORPE, M.R.C.S. ENG., L.R.C.P. LOND.

AS the number of cases of perforated duodenal ulcer with operation and recovery is at present very limited we have thought that it is desirable to publish notes on the following case. The clinical history commenced some three years ago.

The patient, a man, aged 42 years, had an attack of hæmatemesis in June, 1901. This was treated on ordinary lines and quickly ceased. The stomach was found on examination to be somewhat dilated. After the attack he was apparently restored to his usual health, but in August of the same year a second hæmorrhage occurred which again quickly subsided with the same treatment as before. These attacks recurred at the following dates: March, 1902; October, 1903; and January, 1904; in the interval the patient was apparently well. Nausea and the

vomiting of brown fermented fluid usually preceded the attacks of hæmorrhage. Pain was never a prominent symptom although at the time of the hæmatemesis there was much abdominal discomfort and perhaps some pain of a "colicky" description. The physical signs of dilatation became more and more pronounced. There was no tenderness but always much "splashing." This could be heard occasionally even at a distance from the patient on sudden movement—i.e., turning in bed or on a couch. The contents of the stomach could be felt to strike against the thumbs when the hands were placed on each side of the abdomen over the epigastric region. General nutrition was well maintained, the patient never becoming emaciated. As the gastric enlargement increased and hæmorrhage recurred in January, 1904, it was thought desirable to put him for a time (a month) entirely on a milk diet and to keep him at rest in bed. He was seen in consultation with Dr. J. F. Goodhart in February, who advised further rest and a continuance of the milk diet. The consultation was held with the object, if possible, of determining the exact cause of the hæmorrhage and of locating it. It was thought possible that the bleeding was associated with hepatic trouble, and the exhibition of small doses of magnesium sulphate was decided on with the object of lessening any congestion of the liver that might be present and of aiding the portal circulation. Under this treatment the patient appeared to improve and after several weeks' rest was allowed to get up and by April 3rd was apparently quite himself and was taking ordinary food. On the night, however, of that day he had a great deal of abdominal pain and during the night was repeatedly sick, vomiting brown fermented and very offensive fluid in much larger quantity than had been ingested within the previous 24 hours. On seeing him all food was stopped by the mouth and he was treated as before, it being hoped that the attack would subside as hitherto. On the 4th hæmorrhage recurred and he was in a good deal of pain. As his condition was obviously serious, the hæmorrhage being more severe than in previous attacks, Mr. Allingham was asked to see him, which he did on the afternoon of the 5th. By that time, as the bleeding had ceased and the patient's condition had improved, there being no pain and but little discomfort, it was thought best to continue the treatment hitherto adopted and not to operate for the dilated stomach for ten days or so in order to give the patient time to rally from the effects of the bleeding. During all these attacks of hæmorrhage there was never any bright-coloured blood vomited; it was of the "coffee ground" character, and the stools for some days afterwards were quite black. The character of the blood vomited doubtless was a sign that either it was due to repeated small hæmorrhages in the stomach or hæmorrhage beyond the pylorus with regurgitation. At 10 P.M. on April 5th, whilst the patient was absolutely at rest in bed, he was seized with sudden intense pain in the abdomen which radiated upwards over the hepatic region and downwards to the right inguinal region with much pain in the right testicle. He was intensely collapsed and had raised himself into a sitting posture with the object of relieving his agonising pain. From the history of the case in conjunction with the onset of these symptoms a diagnosis of perforation of the stomach or duodenum was made. The physical signs of great abdominal rigidity and the extremely shallow breathing and collapse supported the diagnosis. The pain and collapse were so intense that it was impossible to percuss the liver in order to discover if hepatic dulness was present or absent. It was then decided to ask Mr. Allingham to operate and he was accordingly summoned. In the meantime hypodermic injections of morphine were given. The temperature was subnormal and the pulse-rate was from 120 to 130. On Mr. Allingham's arrival operation was decided on.

The anæsthetic was administered by Dr. E. Chittenden Bridges. An incision was made in the median line from the ensiform cartilage to just above the umbilicus about five inches in length. Immediately on opening the peritoneal cavity fluid welled up and, in short, the abdomen was full of the contents of the intestine. The stomach was carefully drawn out of the wound and examined both anteriorly and posteriorly but no perforation could be found. It was notably dilated. On further examination a large sloughing ulcer of about the size of a penny was discovered in the duodenum, about two inches from the pylorus. This was carefully sutured. The abdomen was thoroughly flushed with boiled water and as far as possible cleansed by repeated sponging. The abdominal wound was then closed and a long gauze plug was left in the upper and lower parts of the wound, the abdomen being allowed to remain full of sterilised water with the object of diluting as far as possible any intestinal contents that might remain.

The patient was in such a grave condition of collapse that although the question of performing gastro-enterostomy was considered it was decided that it was impossible to perform it in his then condition. One-thirtieth of a grain of strychnine was injected during the operation. The patient was put back to bed and brandy was injected hypodermically. These hypoderms of brandy were repeated at intervals as occasion arose and nutrient enemata were given every four hours. Very little pain followed the operation and the patient gradually rallied. Nothing was given by the mouth for 36 hours when one teaspoonful of plasmon was cautiously administered every half hour. A slight rigor occurred about 24 hours after the operation, 48 hours after the drachm doses of plasmon were stopped as hiccough occurred; a turpentine enema was given, part of which was retained. The enema was repeated on the 10th with some success. Plasmon and brandy were recommenced on the 10th, two drachms being given every hour. The patient was fairly comfortable and passed flatus freely. On the 12th, six days after the operation, the plugs were removed under an anæsthetic. During this time the pulse had varied between 112 and 140 and the temperature between 97° and 99·6° F. On the 13th the temperature rose to 101°. The feeding by the bowel was continued; also occasional hypoderms of strychnine and brandy were given. The plasmon was increased to four drachms, alternated with the same quantity of peptonised milk. The condition had in all respects improved. The stitches were removed on the 16th. On the 19th hiccough recurred accompanied by a feeling of nausea and abdominal pain. Food was stopped. Hæmatemesis recurred with much pain and collapse. Adrenalin in five minim doses was administered every hour, and for the collapse brandy and strychnine were again resorted to hypodermically and a sixth of a grain of morphine was given. The patient was kept going with nutrient enemata and no attempt was made to give nourishment by the mouth for 48 hours, when plasmon and brandy, two drachms at a time, were given every hour. The bowels were induced to act by hot water enemata and there was evidence of old hæmorrhage in the actions. Raisin tea (two drachms at a time) was given alternately with plasmon. On the 25th a thrombus formed in the left leg, which was greatly swollen. In other respects the patient appeared to be making progress, feeling no discomfort after the plasmon and raisin tea, which were continued in slightly increased doses but never exceeding a total of 20 ounces in the 24 hours. Occasionally whey and white of egg were given. On May 4th hiccough again occurred and on the 5th nausea, vomiting, and hæmorrhage once more threatened to put an end to the patient's life. Adrenalin was again given. The hæmorrhage on this occasion was more copious than hitherto and the patient's condition seemed hopeless, as in spite of the extreme care which had been exercised in feeding him it was quite clear that the stomach did not empty itself and that the ulcer was not healed. On the 7th raisin tea was again given in two-drachm doses and on the 8th similar quantities of plasmon. The temperature on the 6th sank from 100° at 2 A.M. to 96·6° at 6 P.M. The pulse was 110. As the patient was losing strength and becoming much emaciated it was felt hopeless to persevere with the present course of expectant treatment and the question of performing gastro-enterostomy was raised. Mr. Allingham concurred in the opinion that nothing remained but to do this and on the 11th Dr. Bridges again administered an anæsthetic and Mr. Allingham performed posterior gastro-enterostomy.

An incision was made parallel with, and to the left of, the original wound between five and six inches in length. The stomach had greatly diminished in size since the first operation and the ulcer was quite shut off by adhesions and could not be seen. The patient stood the operation well and from this time there was no further trouble. Liquid food was commenced on May 13th and increased gradually. By the 20th he was taking chicken-broth, milk and barley water, Benger's food, &c. The stitches were removed on the 21st, and within a fortnight of the second operation he was taking solid food in fair quantities, and within three weeks he was quite convalescent. There has been no further trouble at all.

A CASE OF HÆMATOPORPHYRINURIA NOT DUE TO SULPHONAL.

BY G. LESTOCK THORNTON, M.A. CANTAB., M.R.C.P. LOND., M.R.C.S. ENG.

ON July 13th of this year I was summoned to attend a man, aged 45 years, of good social standing and no occupation, who complained of griping pain in the abdomen, nausea, and slight diarrhœa. The patient's family history was good and there was nothing of ill omen in the account that he gave of his previous health. He appeared to have been in good health until July 8th, on which day he suffered from diarrhœa with abdominal discomfort. On the 9th the diarrhœa ceased and on the 10th he felt quite well. On the 11th he travelled to Bristol, returning to Exmouth on the 12th, and in the evening of this day he complained of headache which was followed in the night by slight sickness and diarrhœa, the last of these symptoms continuing until I saw him on the evening of the 13th.

The patient was a man above the average height and strongly built. He showed signs of a very nervous temperament. The temperature was 98° F. in the axilla (he had taken it himself in the morning and found it to be 100·5°). The pulse was 54 and of high tension quality. The tongue was moist and slightly coated all over with white fur. With the exception of an accentuated aortic second sound nothing abnormal was noted on examination of the chest. The abdomen moved freely with respiration and there was no marked distension. There was no evidence of enlargement of the liver or the spleen. There was slight tenderness over an area corresponding to the ascending and transverse portions of the colon. No motion had been reserved for my inspection but I learnt from the patient that there had been some eight or nine during the day and beyond the fact that little had been passed with each motion I could obtain no definite information respecting them. He was ordered a mixture containing subcarbonate of bismuth, bicarbonate of sodium, and salol, the last of which was prescribed in five-grain doses. The mixture was to be given every four hours and his diet was limited to milk.

I saw him on the morning of July 14th and found that there had been three motions during the night, which motions consisted chiefly of blood-stained mucus and bright blood. At this interview the patient expressed some alarm at the colour of the urine which he had passed during the night and on that morning. The specimen which had been reserved for my inspection had been passed directly into a clean utensil and there was no question of contamination in any way. The appearance was that of an average good port wine and a port wine, moreover, which had been carefully filtered, so absolutely free was the urine of any sediment and so intimately was the pigmentation a part of the fluid. On subsequent examination of a sample (which I centrifugalised) the results of the analysis were as follows. Amount in 24 hours less than normal; colour, port wine; reaction, feebly acid; specific gravity, 1028; albumin, slight cloudiness on heating but no resulting deposit; no reaction with nitric acid in the cold or with Esbach's solution; sugar, *nil*; microscopical examination of the very slight deposit showed the presence of a few uric acid and urate crystals; no blood cells were present. On treating the urine with freshly prepared ozonic ether and tincture of guaiacum no reaction was obtained, thus excluding the presence of hæmoglobin. The presence of pure blood had been previously negatived by centrifugalisation and examination of the deposit, and the result was further confirmed with the test just mentioned. Although I had no facility for making use of the further spectroscopic tests there could be no question but that the pigmentation was due to the presence of hæmatoporphyrin.

In seeking for the cause of this condition, that one to which it is most commonly ascribed could be put out of court, for the patient had neither taken sulphonal on his own account nor at my direction. On referring to the subject in Osler's "Theory and Practice of Medicine" I found the most obvious solution, for Osler states that hæmatoporphyrinuria has occurred in patients suffering from intestinal hæmorrhages. I could find no reference in the larger text-books on therapeutics to such an occurrence after the taking of salol, but in view of the uncertain action of this drug I omitted it from the prescription as an extreme precaution.

The further progress of this case was uneventful, the simple colitis with which the patient was evidently affected responding to appropriate treatment. On July 15th the urine had still a distinct port-wine colour. On the 16th the colour was that of rich orange. On the 17th the urine had the appearance of mere high pigmentation, whilst on the 18th there was nothing abnormal in this respect. Beyond occasional bloody mucus in the stools there had been no evidence of hæmorrhage on these days.

This case is of interest on account of the few recorded in which the condition has occurred independently of sulphonal administration. The literature on the subject is at the present time meagre. Halliburton[1] (writing on hæmatoporphyrin) states: "It occurs in certain invertebrate pigments and may also be found in certain forms of pathological urine. Even normal urine contains traces of it." Osler,[2] in his Text-book on Medicine, says that "hæmatoporphyrin occasionally occurs in the urine. It was first recognised by Hoppe-Seyler. Nencki and Seiler determined its exact formula and the former demonstrated that the only chemical difference between hæmatin and hæmatoporphyrin is that the latter is simply hæmatin free from iron. It has been found in the urine in pulmonary tuberculosis, pleurisy with effusion, acute rheumatism, lead poisoning, and intestinal hæmorrhages. This pigment has been found very frequently after the administration of sulphonal." Hutchison and Rainy[3] state that hæmatoporphyrin sometimes occurs in large amounts in the urine of patients who are taking sulphonal and that the occurrence is more common in females than in males. These authors also draw attention to the grave significance of the symptom when caused by sulphonal. Rose Bradford,[4] writing in Allbutt's "System of Medicine," mentions hæmatoporphyrin both amongst the normal and abnormal pigments of the urine. The same author assigned to Dr. A. E. Garrod the credit of having first discovered traces of it in normal urine. Rose Bradford also tells us that hæmatoporphyrin has been observed in rheumatic fever, Addison's disease, peritonitis, and cirrhosis of the liver. He also states that various drugs (not mentioned by name) have, in common with sulphonal, the property of producing this condition of the urine. Lastly, at a meeting of the Pathological Society of London held in March of this year[5] Dr. Garrod gave a survey of the few recorded cases of hæmatoporphyrinuria not due to sulphonal. Dr. Garrod referred briefly to 12 cases and drew a distinction between them and the very common ones where the increase above the normal amount of hæmatoporphyrin was not such as to affect materially the colour of the urine. In a large proportion of these 12 cases the condition was of long standing, in others there was occurrence at intervals, whilst in one instance paroxysmal hæmoglobinuria was simulated. In only two cases were the grave symptoms present which accompany hæmatoporphyrinuria due to sulphonal. As to the cause of this phenomenon Dr. Garrod considered that the evidence is in favour of perversion of hæmoglobin catabolism rather than that of excessive hæmolysis. He also mentioned the morbid changes met with in the liver in hæmatoporphyrinuria both when and when not associated with the taking of sulphonal.

In the case I have recorded the most obvious cause would be that a somewhat severe hæmorrhage had taken place high up in the colon, as there was never at any time tenderness over the sigmoid flexure and nothing abnormal could be detected on rectal examination. My case agrees with the majority of Dr. Garrod's 12 cases in that there were no grave symptoms present, but differs in that there was no history of the symptom having been previously present, at any rate in such a degree as to attract the attention of the patient.

The scant literature on the subject and the paucity of the few published cases of hæmatoporphyrinuria occurring unassociated with sulphonal seem to make it worth while to place this one on record.

Exmouth.

[1] Halliburton's Handbook of Physiology, fourth edition, p. 429.
[2] Osler: Principles and Practice of Medicine, fourth edition, p. 865
[3] Hutchison and Rainy: Clinical Methods, p. 339.
[4] Allbutt: System of Medicine, vol. iv., pp. 286, 290.
[5] THE LANCET, March 5th, 1904, p. 654.

THE CHANNELS OF INFECTION IN TUBERCULOSIS IN CHILDHOOD.

BY L. KINGSFORD, M.D. EDIN., D.P.H. CANTAB.,
DEPUTY MEDICAL OFFICER OF HEALTH OF BRIGHTON.

DURING the last few years, but more especially since the address of Professor Koch at the Tuberculosis Congress of 1901, this subject has aroused great interest and considerable discussion. His statement that tuberculous milk is not a source of danger to the human subject has, speaking generally, met with strong opposition both in this country and abroad. Indeed, some observers have recently gone to the other extreme in contending that practically all cases of tuberculosis at any age can be traced to the ingestion of tuberculous milk in infancy or childhood. The majority of observers, however, steer a middle course and the weight of evidence seems at present to rest with them. The question is a difficult as well as an important one and it is only when a large mass of evidence along the different lines of investigation has been accumulated and weighed that a definite and satisfactory conclusion can be arrived at. Partly with this object I have analysed the post-mortem records of 339 cases of tuberculosis in children of all ages up to 14 years, taken from the East London Hospital for Children, and I must express my indebtedness to Dr. W. P. Branson, the pathologist at that institution, for allowing me to have access to these records. The following table shows the ages at death of all the patients and the number at each age infected through the different channels.

TABLE I.—*Showing the Ages at Death of all the Patients and the Number at each Age infected through the Different Channels.*

Ages.	No. of cases.	Primary infection.			
		Thoracic.	Abdominal.	Pharyngeal.	Doubtful.
Up to 6 months	14	12	0	1	1
6 to 12 ,,	58	39	7	3	9
1 ,, 2 years ...	90	52	16	6	16
2 ,, 3 ,, ...	51	30	16	0	5
3 ,, 4 ,, ...	30	19	5	1	5
4 ,, 5 ,, ...	27	18	6	0	3
5 ,, 6 ,, ...	18	14	2	0	2
6 ,, 7 ,, ...	14	9	5	0	0
7 ,, 8 ,, ...	12	7	2	1	2
8 ,, 9 ,, ...	4	2	1	0	1
9 ,, 10 ,, ...	6	3	0	1	2
Over 10 years ...	9	4	4	0	1
Age not stated	6	3	0	0	3
Totals... ...	339	212	64	13	50

It will be noticed that 162, or 48 per cent., occurred during the first two years, and 270, or 80 per cent., during the first five years, whilst there is a steady decline in the proportion amongst older children. This does not necessarily indicate a greater amount of tuberculosis in terms of children living under five years, though from our collateral knowledge there is reason to believe that this is so.

The following are the recognised methods of infection: (1) inhalation, (2) ingestion, (3) inoculation, and (4) placental, but for all practical purposes our attention may be confined to the first two, as the other methods are exceedingly rare. In inhalation bacilli might conceivably settle on any part of the respiratory tract from the nose and mouth to the alveoli of the lungs. Experimental evidence tends to show that under ordinary conditions the inspired air is free from foreign particles by the time it reaches the larynx.[1] On the other hand, dust inhalation experiments show that when foreign particles are present in great numbers they may be inhaled even into the alveoli, and this is seen too in cases of anthracosis and other dust diseases. It is possible, however, that the children of the poorer class, living as they do so frequently in close, badly ventilated, dirty, and tubercle-infected dwellings, are subjected occasionally to the inhalation of large numbers of tubercle bacilli and so a repetition of the dust experiments may occur. At any rate, 49 per cent. of my cases were infected apparently through the mucous membrane of the trachea or larger bronchi. Of the upper respiratory passages the pharyngeal tonsils, the middle ear, and the faucial tonsils have been shown to be sometimes the points of entry of the disease. Bacilli passing through mucous membranes at any point are soon found to be present in the adjacent lymphatic glands, showing the course usually taken by the bacilli when invading the system. In the case of the fauces or naso-pharynx the cervical glands suffer and the tracheal, bronchial, or pulmonary glands when the bacilli enter through the mucous membrane of the trachea or bronchi.

Ingested bacilli are liable to settle on any part of the alimentary tract from the mouth onwards. The mouth, fauces, and pharynx are thus common both to inhalation and ingestion and infection through these parts would leave a doubt as to its sources. The œsophagus is, except during swallowing, quite empty and thus food or foreign particles are only for a very short time in contact with its mucous membrane. Tubercle of the œsophagus is extremely rare and when occurring is as likely to be due to infection through the blood stream as to food. The stomach, also, is rarely tuberculous but the intestines not infrequently. Bacilli passing through the intestines would be conveyed to the mesenteric and sometimes other abdominal glands and these glands are frequently tuberculous.

The next point for consideration is the importance of tuberculosis of the lymphatic glands in children. In over 90 per cent. of my cases the lymphatic glands were obviously tuberculous, whilst in 68 per cent. they were the primary foci. The great activity of the lymphatic system in early childhood and the rapidity with which the glands enlarge after some peripheral irritation, such as eczema, are matters of common knowledge. It is not surprising, therefore, that they do not show any great powers of resistance against the tubercle bacillus, which, as Carr has shown,[2] usually invades the system primarily by the lymphatic channels, though it may be conveyed secondarily to lymphatic glands by means of the blood stream. This reasonable view has been taken, I think, by all observers, except so far as it applies to the tracheal and bronchial glands, and for the infection of these there are, as Pryce Jones[3] has pointed out, at least five different methods suggested. 1. Through the trachea and bronchi, the most natural suggestion. 2. By the pharyngeal lymphatics. In this case a continuous chain of caseous glands should extend down the neck as far as the thoracic inlet and the thoracic glands would be infected secondarily. Nine of my cases showed this method of infection. 3. Through the œsophageal mucous membrane. As mentioned above, this must be very rare. 4. From the intestinal mucous membrane[4] or mesenteric glands, either by three ways suggested by Woodhead or by the thoracic duct. In the former case primary infection of the mesenteric glands is presupposed and in five cases I was able to trace this line of spread. With regard to the thoracic duct, Ravenel[5] has suggested that tubercle bacilli taken with the food might pass through the intestinal mucous membrane and be carried through the mesenteric glands by the lymph flow directly to the thoracic duct. He was led to this opinion by certain feeding experiments on animals, when a small proportion of the cases showed tuberculous lesions in the thorax alone. Sidney Martin,[6] Baumgarten,[7] and others with similar experiments have not confirmed his observations, so that this line of infection must be considered rare. The result of an infection through the thoracic duct should be miliary tubercles throughout the lungs and perhaps other organs with only secondary lesions in the bronchial glands. 5. Infection by the blood stream must, if primary in these glands, be very rare. If, however, as might be suggested, the route is by the blood stream directly from the intestinal mucous membrane, miliary tubercles, first in the liver and then in the lungs, should result and the bronchial glands

[1] Thomson: Practitioner, July, 1901.

[2] Transactions of the Medical Society, 1894, vol. xvii.

[3] Practitioner, August, 1903.

[4] Fowler and Godlee: Diseases of the Lungs, p. 155.

[5] University of Pennsylvania Medical Bulletin, Philadelphia, vol. xv., 1902.

[6] Transactions of the Medical Society of London, vol. xvii.

[7] Ueber Tuberkel u. Tuberculose, 1884.

would only be infected secondarily as they are supplied from the systemic circulation by the bronchial arteries.

Another point to which attention has been called by Still,[8] Batten,[9] and Latham,[10] and noticed in my own cases also, is the fact that the bronchial glands on the right side are very much more frequently and more markedly tuberculous than those on the left side, this being noticed in my cases almost solely amongst those in which the oldest lesions were found in the thorax. I have been quite unable to account for this fact on the assumption that the infection has come up from the abdomen either by the lymph stream or by the blood stream, for then one would expect both sides to be affected equally. But if the bacilli are inhaled into the trachea, as is usually considered to be the case in the phthisis of the adult, the right bronchus, from its larger size and from it practically continuing the line of the trachea (Fowler and Godlee), would offer greater facilities than the left one for the lodgment of the bacilli on its mucous membrane. If these should succeed in penetrating the mucous membrane they would shortly be found in the corresponding right bronchial glands. The great frequency of respiratory diseases in early childhood is an important factor both in aiding the penetration of the mucous membrane and in predisposing the bronchial glands to tubercle, as such diseases usually cause enlargement in these glands. According to Still[11] amongst children 50 per cent. of the cases of whooping-cough and 86 per cent. of the cases of pneumonia occur under two years and 65 per cent. of the cases of primary bronchitis under the age of three years, whilst a large proportion of the cases of measles also occur at these ages. Before leaving the question of the primary infection of the bronchial glands there is one point which I observed in my own cases and to which attention may be drawn. As will be seen in Table II. out of 64 cases where the origin was obviously in the abdomen only 18 showed tubercle in any of the glands in the thorax, whilst the mesenteric glands were caseous in 62. From this it seems unlikely that in the child the bronchial glands are primarily infected by bacilli entering originally through the intestinal wall. We can now pass to a brief consideration of the cases.

TABLE II.—*Showing the Frequency for each Group of Cases with which Tuberculous Lesions were found in the Lungs and Intestines and the corresponding Lymphatic Glands and Serous Membranes.*

Group.	Number.	Lungs.	Thoracic glands.	Pleura.	Intestines.	Mesenteric glands.	Peritoneum.
Thoracic cases	212	202	202	132	88	92	55
Abdominal cases	64	40	18	24	44	62	40
Pharyngeal cases	13	10	10	0	7	5	4
Doubtful cases	50	42	31	21	26	32	18
Totals	339	294	261	177	165	191	117
Percentages	—	87	77	52	48	56	34

The percentages for the thoracic and mesenteric glands in Still's cases were 81 and 59 respectively and in Carr's 80 and 54, both very similar to my own; but Woodhead's percentages[12]—75 and 78, Holt's[13]—96 and 35, and Bovaird's[14]—100 and 40, differ considerably.

The cases have been divided into three main groups according to the situation of the oldest or primary focus. Of these the largest and most important is the thoracic group, comprising those cases in which the oldest foci were present in the lungs or thoracic glands. These cases number 212, or 62·5 per cent. of the total number, and of these 34 commenced in the lungs and 167 in the thoracic glands, and in the remaining 11 the lesions in both seemed to have been of the same age. This group I have subdivided into three divisions: (1) 88 cases which contained no lesions in the intestines or abdominal glands (in only 16 of these were the lesions absolutely confined to the lungs, the pleura, and the thoracic glands, the remaining cases showing lesions elsewhere, such as miliary tubercles in the spleen, liver, or meninges); (2) 66 cases which showed old tuberculosis in the lungs or thoracic glands but also early intestinal ulceration or commencing tuberculosis of the mesenteric glands; and (3) 58 cases in which, though the origin was almost certainly in the thorax, the abdominal lesions were rather more advanced than in the last subdivision. There existed, however, in the lungs or thoracic glands either some calcareous or earthy deposits or old fibrosis, or else there were, as is so frequent in the adult, old phthisical cavities with secondary intestinal ulceration. In almost all the cases in which the primary origin was found in the lungs the condition was that of a tuberculous broncho-pneumonia in the younger children or an ordinary phthisis in the older, the glands being but slightly if at all affected.

The second group—abdominal cases, 64 in number—comprises those which showed the primary lesions in the intestines or mesenteric glands. These also have been subdivided into three divisions: (1) 24 cases which contained no lesions in the thorax, and of these 11 had the lesions entirely confined to the intestines, peritoneum and mesenteric glands, whilst the remaining 13 showed miliary tubercles in the spleen, liver, kidneys, or meninges; (2) 25 cases originating in the intestines or mesenteric glands but showing evidence of recent infection in the thorax in the shape of miliary tubercles of the lungs or early tubercle of the glands; and (3) 15 cases originating almost certainly in the abdomen but showing lesions in the thorax rather more advanced than in the preceding subdivision. All, however, showed healed or very old chronic intestinal ulcers or calcification or fibro-caseation of the mesenteric glands, by means of which the primary origin was determined.

In a few cases which showed tuberculous peritonitis alone, and no lesion of the intestines or mesenteric glands, the original point of entry could not be determined and these cases were classed amongst the doubtful group.

The adoption of the above subdivisions I considered necessary in order to show my grounds for classifying any particular case under the heading of thoracic or abdominal. Of the 64 abdominal cases 26 seemed to commence in the intestines and 29 in the glands, whilst in nine the lesions apparently commenced simultaneously in both. Caseation of the mesenteric glands was present on 17 occasions without any visible lesions of the intestine. From Table I. it will be seen that 61 per cent. of these cases occurred during the first three years but though this is rather in excess of Still's figures (45 per cent.) it is partly explained by the fact that the proportion of the cases under three years of age to the total cases was smaller in his case than in mine. When the figures are examined more closely it will be seen that barely 10 per cent. of the cases in the first year were abdominal in origin, 17·5 per cent. in the second year, 31 per cent. in the third year, and 16 per cent. in the fourth year, or an average of 18·1 per cent. for those years as against 18·8 per cent. for all ages. The corresponding figures in Still's table are 11 per cent. in the first year, 19·4 per cent. in the second year, 14 per cent. in the third year, and 28 per cent. in the fourth year, or 18·3 per cent. for the first four years as against 23·5 per cent. for all ages. It is thus seen that instead of the proportion of abdominal cases to the total cases of tubercle being greater in the first four years, with the sole exception of the third year in my cases and the fourth year in Still's the figures are actually lower than the average at all ages. Over four years of age the abdominal cases claimed 36 per cent. of Still's cases and 21 per cent. of mine.

It will be interesting here to compare briefly the frequency of primary abdominal tubercle amongst children in this country and abroad. In Great Britain Still, Shennan,[15] Guthrie,[16] Carr, Ashby,[17] and Batten have put on record 214 abdominal cases out of a total of 1119 cases of tubercle, or 19·1 per cent.; in America Northrup,[18] Bovaird, Holt, and Hand,[19] 13 cases out of 434, or 3 per cent.; whilst in France and Germany ten observers have recorded nine cases out of 364, or 2·5 per cent. These

8 Brit. Med. Jour., 1893, vol. ii., p. 455.
9 St. Bartholomew's Hospital Reports, vol. xxxi., p. 183.
10 THE LANCET, Dec. 22nd, 1900, p. 1785.
11 Practitioner, July, 1901.
12 THE LANCET, July 21st, 1888, p. 99.
13 Medical News, New York, 1898, vol. lxix.
14 New York Medical Journal, 1899, vol. ii.
15 Edinburgh Hospital Reports, 1900.
16 THE LANCET, Feb. 4th, 1899, p. 286.
17 Ashby and Wright: Diseases of Children.
18 New York Medical Journal, February, 1891.
19 Archives of Pediatrics, April, 1903.

figures do not include those quoted by Koch at the British Congress on Tuberculosis. A satisfactory explanation of the difference in the frequency of abdominal infection in this country and on the continent and in America has not yet been forthcoming. It is true that on the continent a somewhat different method of classification for abdominal cases is adopted but this can make but a comparatively small difference in the percentage. There is also another factor in some parts of the continent which may tend to diminish the frequency of abdominal tubercle and that is the much larger scale on which sterilised milk is prepared and sold there as compared with its sale in this country. Are the cows less frequently tuberculous or under better inspection and regulation abroad than in this country, or if this be not the case what are the altered conditions of life amongst children here that predispose to more frequent abdominal tubercle? These are questions of great importance and their solution will go far in helping to settle definitely the discussion on the infectivity of tuberculous milk. My own figures, 64 cases out of 339, or 18·8 per cent., practically coincide with the others in this country quoted above and bring the total of abdominal cases up to 278 out of a total of 1458, or 19·06 per cent. When considering the possibility of cow's milk being responsible for these figures attention must be directed to the class of children under consideration in this paper. They are practically all drawn from the poorest neighbourhoods of the East-end, many from families who have to look carefully at a penny before spending it. Cow's milk from the dairy, diluted though it so frequently is in London, is to most of these families an expensive article of diet, to be used in small quantities only, and its cheaper substitutes—condensed milks or patent foods—usually supplement and frequently supplant it in the case of bottle-fed infants and very young children. And where cow's milk is used it is frequently boiled or "scalded," processes which readily kill the tubercle bacillus, or the milk is diluted with very hot water or hot tea with probably the same effect. Consequently, the chances of a child taking any quantity of virulent tubercle bacilli with the milk are greatly diminished. Amongst this class of children I should be inclined to regard two years as the limit of milk age, as after this the children are fed practically on the same diet as their parents. At any rate, if milk is an important factor in the causation of abdominal tubercle its effects should be most pronounced in the first two and a half years of life (allowing an incubation period of some months), since most milk is taken during that period. It has, however, already been seen that primary abdominal tubercle is proportionately less frequent during these years than in the later years of childhood. I lay great stress upon this point on account of certain extreme views which have been advanced lately. For instance, according to a summary of his paper on the Etiology of Phthisis, Professor Behring [20] is reported to have said: "The mainspring to which phthisis must be traced is the milk diet of suckling infants; not that milk *per se* is especially infective, but suckling infants lack in their digestive systems the protective mechanism of the more developed organism against the invasion of pathogenic irritants."

I may here quote from Dr. A. Newsholme's annual report of the public health of Brighton during 1903. Whilst making house-to-house inspections in Brighton in 1903 the sanitary inspectors made inquiries with regard to the feeding of 337 infants in 2670 houses. The result is summarised in the following table, which gives the percentages of the children fed on the breast, on cow's milk, and on condensed milk for each quarter during the first year of life.

TABLE III.—*Showing the Food of 337 Infants.*

Manner of feeding.	Ages. Under 3 months.	3 to 6 months.	6 to 9 months.	9 to 12 months.
	Per cent.	Per cent.	Per cent.	Per cent.
Breast entirely or breast and some patent food	86·0	69·0	70·4	71·0
Cow's milk only ...	7·5	10·0	7·6	8·0
,, ,, in part...	5·0	9·8	16·5	14·5
Condensed milk only or in part ...	0·0	11·0	5·5	4·0
Other food	1·5	0·0	0·0	2·5

[20] Brit. Med. Jour., Oct. 17th, 1903.

Although 337 is rather a small number to base a calculation upon, yet this table gives an indication of the manner in which the poor in Brighton feed their infants, and it is probable that if the London poor differ in their manner of feeding it is rather in the direction of less cow's milk. I have unfortunately been unable to ascertain the proportion of the infants who were fed on boiled or scalded milk as that did not come within the scope of the inquiry. The table shows that still a considerable majority of mothers suckle their infants, and tuberculous mammitis being an almost unknown disease in the human subject it follows that nearly 75 per cent. of the infants below 12 months of age are saved the danger of swallowing tubercle bacilli with their food.

With the exception of three instances amongst my own cases of primary abdominal tubercle in children up to the age of 15 months I have unfortunately no record of the diet they had been having. In one of these three, however, there was a history of the child never having tasted cow's milk. This leads me to suggest that some of the cases of abdominal tubercle may have been due to inhaled bacilli, which having settled upon the mouth or pharynx have been swallowed with the food or saliva, thus infecting the abdomen primarily. I admit that these cases must be exceptional, in view of the rarity of primary abdominal tubercle in America and on the continent.

Great stress has been laid by Woodhead [21] upon the infection of the bronchial glands from the abdomen by way of the retroperitoneal glands or through adhesions between the liver and visceral pleura with the diaphragm. In seven instances I was able to trace a spread up from the abdomen, two of these being by the retroperitoneal glands and five either through the diaphragm directly or through adhesions with the diaphragm. But in all these cases the mesenteric glands showed old caseation and were the primary foci of the infection. Out of the total number of cases 34 showed adhesions between the liver or spleen or both with the diaphragm and 30 between the visceral pleura and the diaphragm.

The next group (pharyngeal cases) includes 13 cases infected through the fauces, pharynx, naso-pharynx, or middle ear. Of these the middle ear was responsible for four, all one year of age, and in these caries of the petrous bone and tuberculous meningitis were the chief lesions. These cases are probably due to inhalation. In five others the origin was through the pharynx or fauces, one of them originating in the tonsil. This case was the only one showing local evidence of the disease but they all had a continuous chain of caseous cervical glands extending deeply into the neck. In the remaining four cases, of the ages of 11 months, 15 months, three years, and nine years, the origin was not quite so clear, as the tracheal glands were also considerably caseous, but the origin was probably in the pharynx. The number of cases infected through these channels is considerably under-estimated since only a small proportion of the cases ever reach the post-mortem room as the disease usually remains localised and frequently gets cured. Shennan found 3·6 per cent. of his cases infected through the tonsils or the pharynx. As to the source of the bacilli in these cases, feeding experiments on animals show that the tonsil sometimes can become tuberculous primarily, whereas no cases have been recorded where the tonsil was infected as the result of inhalation experiments. I do not think, however, that the experiments have been sufficiently numerous or exhaustive to put infection through the tonsil or pharynx by inhalation altogether out of court. Whilst Professors Hueppe [22] and von Behring have been emphasising the low resisting power in children of the alimentary mucous membrane generally, Dr. Aufrecht [23] asserts that practically all cases of tubercle are due to an invasion through the tonsils and that the bacilli get into the blood stream directly from the adjacent cervical glands and so infect the lungs. It is much rarer to find post mortem tuberculous cervical glands than tuberculous mediastinal or even mesenteric glands, but the only figures available are those recorded by Batten—namely, 14 per cent. of the total cases.

A large group of cases of doubtful origin, 50 in number, remains and includes cases where the peritoneum alone, the liver or spleen only, the spine or the hip-joint alone showed tuberculous lesions. There was one case of apparently a primary tuberculous meningitis and five cases of early general tuberculosis, but the majority were those in which

[21] THE LANCET, July 21st, 1888, p. 99.
[22] Harben Lectures, 1903.
[23] Journal of Tuberculosis, Ashville, N.C., April, 1903.

the lesions in the thorax and abdomen were too far advanced to give any clue as to the method of infection.

No mention has been made of cases of inoculation as in tuberculous warts or in lupus. These cases almost always remain local and are of secondary importance in a paper of this nature. The same may be said of placental infection or congenital tuberculosis on account of its rarity. Such cases seldom are admitted into hospitals as they rarely live beyond the age of a few weeks.

In conclusion, if we regard the middle-ear cases as infected by inhalation, the tonsil cases as an alimentary infection, and the remaining pharyngeal cases as doubtful, since it was not certain whether the infection had entered by the tonsils or naso-pharyngeal adenoids, then inhalation would account for 216 cases, or 63·7 per cent., and ingestion for 65, or 19·1 per cent., the remaining 17 per cent. being of doubtful origin. So far, therefore, as can be judged from these methods of investigation the danger from inhalation far exceeds that from the ingestion of tuberculous material. With regard to the importance of tuberculous milk, however great the potential danger may be, the real danger is in many quarters greatly exaggerated, probably owing to the children not drinking the tuberculous milk of the virulence and in the quantity usually affirmed. Still, whether the danger has been exaggerated or not, the fact that nearly 20 per cent. of the cases of tubercle amongst children in the large towns in this country are primarily alimentary makes out a good *primâ facie* case against tuberculous milk, and I believe it will be shown that one of the chief differences between the conditions of life amongst children at home and abroad which could have any effect in predisposing to primary abdominal tubercle exists in the greater frequency of tuberculous milk in this country. But whilst attention is rightly being directed towards the restriction of the sale of tuberculous milk, it is chiefly to the improvements in the conditions of life—such as cleanliness, ventilation, disinfection, and better housing—that we must look for the diminution of tubercle amongst children.

Brighton.

SOME POINTS IN THE PREVENTION OF EPIDEMIC DIARRHŒA.

BY J. T. C. NASH, M.D. EDIN., D.P.H. CANTAB.,
MEDICAL OFFICER OF HEALTH, SOUTHEND-ON-SEA.

MANY adhere to what they term "the well-established fact" that "when the subsoil temperature at a depth of four feet below the surface reaches 56° F. diarrhœic affections become prevalent each summer." The observation was originally made by Dr. Ballard, but I have shown[1] that though the four-foot earth temperature at 56° and the advent of diarrhœa are frequently coincidental they are not always necessarily so. My own opinion is that the usual seasonal circumstances during July, August, and the first half of September are in favour of contamination of food (especially milk) firstly and chiefly by flies and secondly by dust. The warm weather favours the rapid multiplication of deleterious germs deposited by flies and dust. I am quite convinced from continued observations that the common housefly is the principal agent in carrying diarrhœa-causing bacteria to food. I have always found that the districts which have most diarrhœa are those which are most infested with flies, particularly if in the neighbourhood of refuse heaps, manure pits, stables, midden-privies, and similar collections of organic refuse, which serve as breeding places for flies as well as for the noxious germs which they carry thence to the food-supplies in adjoining houses and shops. When once a case of diarrhœa occurs during the fly season (particularly in poor neighbourhoods, where houses closely adjoin, where the hard-working mother of a family has so much to do that she does not always immediately remove soiled napkins, &c., but leaves them about exposed) it is easy to see how flies can readily spread infection to adjoining houses.

Where municipalities neglect to flush the streets properly, desiccated horse dung (as first suggested by Dr. F. J. Waldo) and other deleterious organic dust which is commingled with ordinary street dust must also play a part in the causation and spread of diarrhœa when gusts of wind blow such dust on to exposed food, but I am of opinion that the part played by dust is but small in comparison with that played by flies. I have no hesitation in asserting that the number of cases of epidemic diarrhœa occurring during any summer will be found to vary directly with the number of flies present in any given season. I am not alone in this opinion. Many medical officers of health and others have ascribed to the domestic fly some part in the spread of diarrhœa, but my opinion is that the fly is the chief factor in epidemic diarrhœa as the carrier of infection, just as the mosquito plays a similar rôle in connexion with malaria. This opinion is shared by Dr. Edward Blake who in his recent interesting work on "Colitis"[2] italicises this sentence: "The fly season is the diarrhœa season."

Where milk-supplies have been contaminated by careless milkers at the cowsheds the warm temperature of summer, *quâ* temperature, must play some part in the rapid multiplication of hurtful organisms. This no doubt accounts for the greater number of cases which occur independently of fly contamination. The essentials for putting a stop to the great waste of infant life every summer are: (1) Clean milk-supplies; (2) clean towns with well-organised systems of sewage removal, dust collection and disposal, and street watering; (3) clean homes, where sufficient domestic hygiene prevails to understand the importance of clean utensils for food, *the covering over of food to protect from dust and flies*, and personal habits of cleanliness; and (4) inhibition of fly life. This will largely depend on the previous requirements. Should any community enjoy the fulfilment of all these requirements I venture to think that that community will also enjoy a remarkable immunity from epidemic diarrhœa, no matter whether the four-foot earth thermometer registers 56° for the greater part of the summer or not.

In connexion with this matter I have recently had printed the following hints to householders in the hope of preventing much unnecessary diarrhœa.

DIARRHŒA.

This disease is very dangerous and rapidly fatal in young infants. It is therefore necessary to know how to prevent it rather than to hope to cure it. Several causes contribute to this disease. Any or some or all of these causes may operate in a particular instance. It is important to know what they are and to take the necessary precautions to prevent all if possible. They are in one word—dirt. In more than one word they are: (1) unclean milk and other food; (2) unclean jugs and bottles; (3) unclean hands; (4) unclean surroundings; (5) unclean air (from overcrowding, &c.); (6) unclean flies; (7) unclean dust.

Diarrhœa is more common and fatal in hot weather than at any other time. Why?

1. Because there are more flies, which settle on dirty refuse heaps, dirty closets, dirty napkins, &c., and then settle on the food or tumble into the baby's milk, or get into the open tin of condensed milk, or walk about the sugar.

2. Because there is more dust, which is blown in at the open window on to milk and other food left exposed.

3. Because germs are really very small microscopic plants, which, like nearly all other plants, grow best when the weather is warm.

Fortunately boiling will destroy nearly all germs. Therefore during the hot weather, to prevent young infants from getting diarrhœa from milk boil all milk directly it comes into the house. But this is not everything. If after milk is boiled it is put into a half-cleaned jug or cup or bottle, or is left exposed so that flies can settle on the margin or fall into it, it will rapidly become contaminated again. Therefore, after boiling always keep the milk in clean vessels and covered over with a clean cover. The milk should also be kept as cool as possible. A good plan is to stand the covered milk jug in a basin of cold water. A mother or nurse should always wash and dry her hands just before preparing the baby's meal. A large number of people in a room contaminate the air of the room and impart to it properties which will rapidly spoil milk. Therefore it is important not to allow several people to come into the kitchen or near the larder.

Every precaution should be taken to prevent flies settling on food and to destroy flies in the house. All animal and vegetable waste should be burned as soon as possible. If put into the dustbin or left about in the kitchen or larder they cause offensive smells and attract and breed flies. Cleanliness in every detail is the great preventive measure against diarrhœa.

When a case of diarrhœa occurs in a house great care should be taken to at once place soiled napkins, &c., in a disinfectant solution and to boil all infected articles as soon as practicable. If napkins, &c., are left exposed flies can settle on them and carry back infection to the baby or to other children in the same house or in neighbouring houses.

Another pamphlet is distributed which, among other matters, calls attention to the dangers of long-tube bottles, poor condensed milk, miscalled infant foods, &c., and gives simple directions for preparing milk for hand-fed infants according to age. Under present conditions of milk-supply the boiling of milk used for infant feeding is an unfortunate necessity, particularly during hot weather. Unless facilities exist for supplying pasteurised milk the simpler the processes recommended to the poor and ignorant the better. The pamphlet method of instruction has its limitations, but no doubt effects much good in some instances.

Southend-on-Sea.

[1] Transactions of the Epidemiological Society, N.S., vol. xxii., p. 118.

[2] Blake: Colitis. H. J. Glaisher, London.

A CASE OF NEPHRITIS SIMULATING DIABETES INSIPIDUS.

BY J. BRUNTON BLAIKIE, M.D. EDIN.,
PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION, MARGARET-STREET, W.; CLINICAL ASSISTANT AT THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

THE case described as diabetes insipidus by Dr. A. H. Carter in THE LANCET of August 26th (p. 588) has prompted me to narrate the following case which occurred in Sir Thomas Fraser's wards of the Royal Infirmary, Edinburgh, in the summer of 1897.

The patient was a girl, aged 11 years, who was admitted with the complaints of great thirst and the passing of large quantities of urine. Her previous health, beyond the fact that at the age of three years she had had jaundice and when six years old she had measles, was stated to have been good. There was no history of an attack of scarlet fever. Ever since infancy she was said to have drunk large quantities of fluid; even when a baby her nurse noticed that she consumed much more milk than is usual in an infant of her age. She was always thirsty and would drink any fluid to which she could get access if deprived of a sufficiency of water. At times she was also exceedingly voracious. For a few months previous to admission to hospital she had been getting rather weak and she was noticed to be languid and easily tired.

On examination the patient was observed to be thin but not emaciated; she weighed 3 stones 1 pound. The mouth was dry and the tongue was slightly furred. The bowels were said to be usually constipated. The circulatory system was apparently healthy; the pulse tension was not increased nor was the vessel wall thickened. The skin was rather dry and harsh. Nothing abnormal was to be detected in the respiratory, hæmopoietic, or nervous systems. The urine during the first ten days in hospital averaged 90 ounces; it was clear, neutral or faintly acid, of specific gravity from 1003 to 1006, and contained a faint trace of albumin; no tube casts were found. The urea averaged 194 grains per diem.

During the first two weeks she was in hospital she did not look seriously ill, but at the end of ten days it was observed that both the quantity of urine and the amount of urea passed began to diminish. Four days later she complained of discomfort in the epigastrium; nothing abnormal could be discovered on examination, but her general condition became more disturbed than could be accounted for by a simple stomach-ache. She was nervous and restless and the respiration began to become deep, anxious, and jerky. On the following day the bowels were very freely moved—the result of medicine—and she ceased to complain of the epigastric discomfort. She, however, now developed an acute pain over the left clavicle for which there was no apparent local cause. Her anxiety and restlessness increased and she cried continuously. The respiration had become even deeper and more jerky. The tongue was furred, the pulse was 124 and bounding, and the temperature was 97·4° F. As the day advanced she became quieter, but drowsy and weaker and complained of inability to swallow. There was, however, no apparent paralysis. During the last 24 hours she had passed about 40 ounces of urine. By the following morning she had become unconscious; the right pupil was widely dilated and the left only partially so. The pulse was weaker and the temperature was 97°. There was commencing Cheyne-Stokes respiration. She gradually sank and died at 7 P.M. the same evening. There was some twitching of the limbs before death.

The post-mortem examination revealed no noteworthy morbid appearances except in the nervous and the urinary systems. The brain substance was found to be œdematous; the grey matter of the cortex and the basal ganglia showed irregular patches of congestion. The pons was studded throughout with numerous small hæmorrhages about one-sixteenth of an inch in diameter. These were of quite recent character, symmetrically arranged on the two sides, and were more numerous in the middle of the pons. Only a few small hæmorrhages were present in the lower part of the crura and one or two were seen in the upper part of the medulla. The rest of the medulla showed general congestion of the grey matter but contained no hæmorrhages. The following is the report on the kidneys: "The left weighed two ounces and the right three ounces. Both were extremely small; the capsule of each was adherent; the surface was somewhat irregular and showed extreme waxy pallor. On section the cortex was enormously diminished, especially in the left kidney, so as to constitute a mere line at places, with pyramidal cortex also diminished but to a less degree. The whole kidney surface was of somewhat translucent yellowish-white colour with only a few points and streaks of congestion at places. There were numerous small cysts present both in the cortex and in the medulla; these were more numerous in the left than in the right kidney. The Malpighian bodies appeared enlarged at places. The condition was chronic nephritis with extreme contraction and atrophy, probably following acute and subacute changes. The extreme anæmia of the kidneys was very striking. No waxy change was present."

From the above description it is seen that this case closely resembles that described by Dr. Carter. Unless one is content to use the term "diabetes insipidus" as a mere name for a symptom one must be in a position absolutely to exclude the possibility of the case being one of nephritis, and that, as the foregoing instance shows, can be done only by a post-mortem examination.

Brook-street, W.

DEATH CERTIFICATION.[1]

BY WILLIAM BERRY, F.R.C.S. IREL., D.P.H.,
SENIOR HONORARY MEDICAL OFFICER TO THE ROYAL ALBERT EDWARD INFIRMARY, WIGAN; MEDICAL OFFICER OF HEALTH OF THE COUNTY BOROUGH OF WIGAN.

I AM presuming to address you on a subject which interests me personally as a medical officer of health and interests also the registrar of deaths, who, as a rule, is not conversant with the medical terms used or with the pathology of disease.

Death certification gets very scant attention from the various teachers in the medical curriculum, so that when a young man is launched forth fully qualified, unless he has had an opportunity during his vacation of seeing some general or out-door dispensary practice, he is somewhat at a loss to record in exact terms the cause of death in many of his patients.

If he has a Nomenclature of Diseases as published by the Royal College of Physicians of London or if he will adopt a classification adopted by some authors in their text-books on medicine he is somewhat helped. The best synopsis is that found in Tanner's Index of Diseases. The death certificate book does not help him much, although you will find a list in the first few pages of the book and you will also find the following remarks: "It is highly desirable that medical practitioners should use in their certificates of death only those terms which are recognised by the Royal College of Physicians of London. ..... The cause of death should be stated precisely and briefly; English names for diseases being used in preference to their equivalents in other languages. Vague terms such as *decline*, *consumption*, *tabes*, *cachexia*, &c., should be avoided; and *hæmorrhage* should not be assigned as the cause of death without indication of its origin and probable cause; *dropsy* should never be returned as the cause of death without particulars as to its probable origin—e.g., in disease of the heart, liver, or kidneys." Now I agree with these remarks although the list given is not in strict accord with the pathology as dropsy is only a symptom. Precise and brief should be the record of the cause of death. The disease and not a symptom should denote the cause or, in other words, the pathological term should be employed. Hæmorrhage is only a symptom, dropsy as before stated is only a symptom, hyperpyrexia is only a symptom.

Whilst thinking out this paper I came across the following.[2] It is from the annual report of the Registrar-General for England and Wales for the year 1902.

Inadequate Certification.—The deaths of 50,170 persons during 1902 were attributed to causes that are practically useless for purposes of classification. A much larger number of deaths from indefinite causes would have appeared in the report but for the systematic inquiries

[1] Abstract of a paper read before the Wigan Medical Society on Sept. 1st, 1904.
[2] Brit. Med. Jour., August 20th, 1904, p. 417.

addressed to medical practitioners respecting deaths certified as due to dropsy, tumour, hæmorrhage, and certain other indefinite conditions. In the course of the year 4706 replies to these inquiries were received, resulting in most cases in a more precise classification of the causes of death. For example, 448 deaths from malignant disease, 367 from tuberculous disease, 165 from appendicitis, 153 from puerperal septic diseases, and 111 from gastric ulcer were transferred to their proper headings, as a result of the additional information so obtained.

I have taken somewhat haphazard from the list of returns for one year made to me by the registrar of deaths. These returns are also sent to the Registrar-General in London. The following are given as causes of death:—

1. Acute pneumonia.
2. Cardiac failure.

1. Scarlet fever 14 days.
2. Otitis media.

1. Bronchitis.
2. Cardiac failure.

1. Premature birth.
2. Asthenia.

1. Pneumonia two days.
2. Syncope.

1. Severe pressure during birth.

1. Acute mania.
2. Gangrene of both feet.

1. Broncho-pneumonia.
2. Cardiac failure.

1. Malignant tumour of colon 12 months.
2. Exhaustion.

1. Tubercular ulceration of stomach.
2. Exhaustion.

1. Enteritis.
2. Meningitis.

1. Bright's disease three months.
2. Hæmorrhage from brain one day.

1. Zymotic enteritis.
2. Collapse.

1. General tuberculosis.
2. Convulsions.

1. Severe burn on knee (left) nine months.
2. Disease of knee-joint probably tubercular.
3. Operation 24 days.
4. Pyæmia six days.

1. Senile decay.
2. Cerebral hæmorrhage.

1. Bronchitis with abscess one year probably tubercular.
2. Asthenia.

1. Cerebral hæmorrhage. Coma.

1. Gangrene of foot.
2. Lymphangitis ten days.
3. Operation.
4. Exhaustion.

1. Scarlet fever and measles 20 days.
2. Bronchitis six days.

1. Teething.
2. Congestion of lungs.

1. Acute suppurative periostitis six days.
2. Exhaustion.

1. Valvular lesion of heart five and a half years.
2. Ascites 20 days.
3. Operation (tapping) two days.
4. Syncope.

1. Carcinoma breast (scirrhus).
2. Operation.
3. Recurrence.
4. Exhaustion.

1. Measles.
2. Pneumonia.
3. Cardiac failure.

1. Chronic nephritis.
2. Suppression of urine.

1. Chronic ovaritis.
2. Salpingitis 12 months.
3. Operation.
4. Syncope.

1. Acute congestive laryngitis five days.
2. Cyanosis.
3. Asphyxia.

1. Interstitial nephritis.
2. Embolism.
3. Heart failure.

1. Tubercular ulceration of intestines.
2. Diarrhœa.

1. Enlargement of liver.
2. Abdominal tumour.
3. Dropsy.
4. Heart failure.

Examples of Coroners' Verdicts.

Burns caused by getting his shirt ignited at the fire.
Suicide by cutting his throat (temporarily insane).
Natural causes. Probably bronchitis and syncope.
Burns by getting her clothes on fire same day.
General break-up of system accelerated by injuries while unloading on Lancashire and Yorkshire Railway.
Burns by getting clothes ignited accidentally.
Self-neglect and alcohol.

You will see from this list that the certification is not *precise* and *brief* but is too full, and records in many instances symptoms for a disease. Tanner in his synopsis gives a good classification and one which meets all requirements.

[Mr. Berry here introduced an elaborate classification in tabular form which we are compelled to omit on account of its length. It contained 30 principal headings with a number of subdivisions under each.]

The Registrar's register is divided into columns and he has very little space for putting in the diseases. Although English is recommended by the Registrar-General as the simplest it is not always elegant or precise. The term "inflammation of the bowels" is unsightly and not precise and is much better expressed by "peritonitis" or "enteritis"; "inflammation of the lungs" also is better expressed by "pneumonia." Latin, I think, enables us to certify a cause of death precisely and briefly, and, again, it is not always wise to let the relatives know the cause of death in plain language; they are better pleased if the name of the disease has a jaw-breaking pronunciation and is a term not easily "understanded of the people." *Pew-monia* is a favourite disease from which many of our friends die, according to information supplied to us by relatives; the term certainly pleases the public.

In conclusion, I would suggest that a definite idea should be formed as to the filling up of the certificate and then the cause of death should be as brief as possible; if a primary disease is sufficient, then leave out the secondary one; for instance, "pneumonia acuta" is sufficient without putting "cardiac failure" or "syncope." Never give a third cause if possible.

P.S.—Since the above was written the following have been registered:—1. ——, aged three years: (1) acute toxæmia; (2) gastro-enteritis; (3) vomiting; (4) diarrhœa; (5) exhaustion; (6) collapse; (7) cardiac failure. 2. ——, aged seven months: (1) improper feeding; (2) rickets; (3) vomiting; (4) diarrhœa; (5) cardiac failure.

Wigan.

A NOTE ON THE PATHOLOGY OF LATERAL CURVATURE OF THE SPINE.

BY G. C. STEELE-PERKINS, M.D.

IT is not my intention to enter at all fully into the morbid anatomy and pathology of lateral curvature of the spine, as they have been fully dealt with by many authors. It will be sufficient to remark that in those cases in which there is a lateral deviation without rotation no structural changes are present; there are only weakness and want of development of the muscles. In cases in which there is lateral deviation with more or less rotation the changes present are dependent upon the amount of rotation that has taken place; in slight cases of this description little more than muscular wasting and relaxation of muscles are noticed, whereas in more advanced cases the changes include an alteration in the thickness of the bodies and intervertebral discs.

In severe cases the bodies of the vertebræ become very dense in structure on the side of the concavity and their cancellous tissue even becomes compact. The spinal muscles in severe and long-standing cases are often found to have undergone fatty degeneration and even fibroid changes are sometimes present. The thorax has its respiratory capacity much diminished and the viscera undergo alterations in their positions. The pelvis is more or less altered in shape according to the severity of the case and the lumbo-sacral angle trespasses either on the left or right of the cavity according as to whether the convexity of the curve in the lumbar region be to the one side or the other.

Any disease, constitutional or otherwise, which produces general debility and loss of stamina, gives rise to more or less difficulty in maintaining the erect position and the result is an increase in the normal antero-posterior convexity of the spine in the dorsal region—a condition which is known as kyphosis or stooping. This general want of muscular strength if associated with some determining factor causes a lateral deviation of the spine to occur, which when persistent and if more than to a limited degree, and accompanied as it is with a weakening of the spinal ligaments, must of necessity give rise to rotation of the bodies of the vertebræ. Where there is a general falling off in muscular power it is the spinal muscles that suffer more than any other part, as they have to maintain the body in the erect position. "Determining factors" may be instanced by the standing on one leg, writing in wrong attitudes, and various positions which have to be adopted when following certain occupations. The spinal muscles are prominent on the convex side of the curve and flattened on the side of the concavity. This is due to the transverse processes on the convex side being more prominent owing to the rotation of the bodies to that side, which of necessity causes the transverse processes to come backwards, and to the transverse processes on the concave side being less prominent owing to their being rotated forwards, added to which is the fact that the muscles on the concave side are weakened.

A curvature having taken place in one part of the spine, sooner or later a compensating curve will occur in another part. It is always an important point, as far as treatment is concerned, to decide which curve is primary and which secondary. The most common deformity met with is a curve in the dorsal region with the convexity to the right and a curve in the lumbar region with the convexity to the left. In many cases the dorsal is the primary and the lumbar the compensating or secondary curve, whilst in other cases the lumbar curve is primary and the dorsal secondary. For instance, if the determining factor be the excessive use

of the right arm then the dorsal curvature would be primary and the lumbar secondary, whereas on the other hand if the determining factor be due to the fact that one leg is shorter than the other the lumbar curve will be primary and the dorsal curve secondary. In many cases it is very difficult to determine which of two curves is primary, nevertheless no trouble should be spared in endeavouring to form a correct diagnosis on the point. The importance of it lies in the fact that in treating the case it is the secondary curve that first disappears, although at the same time a reduction in the primary curve is taking place and it is the primary curve that is straightened last. We have first, therefore, to direct our main attention to the reduction of the secondary curve and when this has been rectified we can bring our energies to bear on the straightening of what remains of the primary curve. The cause of the deformity will in a large number of cases enable us to decide at once which is the primary curve. The primary curve is generally greater than the secondary, although sometimes the secondary curve is the greater of the two, in which case a third curve will often be found which is really compensatory to the second curve, and in the treatment of such a case the third curve must receive the greatest attention at first, then the second curve, and, finally, what then remains of the primary curve. A third curve may, of course, occur, and often does, without the secondary curve becoming greater than the primary curve, but nevertheless it is compensating to the secondary curve. The primary curve may be in the cervical, dorsal, or lumbar region; most usually it is in the dorsal region, but primary lumbar curves frequently occur, being caused by one leg being shorter than the other or a tilting of the pelvis to one side. It is to be noticed that a shortening of one leg does not necessarily, although it does usually, result in a lumbar curve with the convexity on the side of the shorter leg, as one would expect, but that sometimes the convexity of the lumbar curve is on the opposite side to that of the shortened leg. The pathology of this is obscure but the fact remains. A compensating curve is naturally always on the opposite side to the curve which it compensates. A dorsal curve is not always compensated by a lumbar curve but sometimes by a curve lower down in the dorsal or else in the dorso-lumbar region.

Wimpole-street, W.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. MARY'S HOSPITAL.

TWO CASES OF RICHTER'S HERNIA WITH PERFORATION AND PERITONITIS.

(Under the care of Mr. V. W. LOW.)

CASE 1.—A woman, aged 30 years, was admitted to St. Mary's Hospital on Feb. 3rd, 1904. In September, 1903, she had a doughy swelling in the right groin accompanied by pain; no impulse could be felt and there was neither vomiting nor constipation. The case was regarded as being one of inflammation of a crural gland and cleared up under local treatment. On Jan. 30th, 1904, the lump again appeared, accompanied by pain, and there was in addition some redness in Scarpa's triangle; no impulse could be felt on the patient coughing. The bowels did not act on this day. On the 31st there was some vomiting and the pain was worse; the bowels acted slightly. On Feb. 1st the vomiting ceased but the bowels did not act. On the 2nd the vomiting recurred in the evening and there was considerable pain in the region of the umbilicus. On the 3rd the pain became intense and the vomited matter was dark in colour and of a foul odour. There had been now no action of the bowels for three days in spite of repeated enemata and Dr. S. G. Felce, to whom Mr. Low is indebted for the history, sent her at once to St. Mary's Hospital.

On admission the woman appeared to be ill but was not collapsed. Her temperature was normal, her pulse was 96, and her respirations were 18. There was a soft, tender, non-expansile and irreducible swelling in the right groin in the position of a femoral hernia. The skin over the swelling was œdematous and red. The abdomen was slightly distended but the abdominal walls moved on respiration. There were no rigidity and only the slightest degree of tenderness. The patient was four months pregnant.

At the operation, which was performed within half an hour of her admission, on exposing and opening the sac of the hernia it was found to contain a quantity of foul pus and feculent material but no bowel. The abdomen was then opened in the middle line below the umbilicus and a condition of advanced general purulent peritonitis was discovered, the peritoneal cavity containing fluid fæces. Near the internal opening of the femoral canal was a coil of intestine about two inches above the ileo-cæcal junction, two-thirds of the lumen of which had been nipped by the opening of the femoral ring to form a Richter's hernia. The herniated portion was gangrenous and had perforated in two places. About four inches of intestine were excised, including the gangrenous patch, and two Paul's tubes were tied into the patent ends of the intestine. The abdominal cavity was thoroughly irrigated with hot saline solution and a glass drainage-tube was inserted into the pelvis. The patient appeared at first better after the operation but gradually sank and died 20 hours afterwards.

CASE 2.—A woman, aged 41 years, was admitted to St. Mary's Hospital on March 5th, 1904. She was in her usual health till Feb. 25th. She had previously suffered from pain in the right groin for two years and this pain had been accentuated during her last pregnancy, which terminated in August, 1903. No local swelling had ever been seen before the onset of the present illness. On the 25th the patient noticed a sudden pain in the right groin and she vomited. At the same time a swelling appeared in the groin. The pain was sharp and continuous and any food she took was immediately vomited. The pain continued and she was unable to do her work, though she still remained up and got about the house. The bowels were confined from the beginning of the attack, neither fæces nor flatus being passed. Enemata were prescribed without result. On the 28th she took to her bed, the symptoms having become more severe and the pain intolerable. Her condition became steadily worse till she was admitted to hospital on March 5th. Her bowels had not been opened for eight days and for four days she had scarcely taken any food owing to the persistent vomiting.

On admission her pulse was 120, her respirations were 28, and her temperature was 97° F. There was no marked evidence of collapse and the woman was cheerful. The abdomen was flaccid and not in the least degree tender. There was a swelling in the position of a right femoral hernia which was irreducible to slight taxis and non-expansile; it was, however, tender and the overlying skin was slightly œdematous. On opening the sac purulent fluid escaped but no bowel was present. The abdomen was then opened in the middle line and a condition of general suppurative peritonitis was discovered; the pelvis was filled with a purulent fluid similar to that which had escaped from the wound in the groin. The peritoneal surface of the intestines was injected and covered with flakes of yellow lymph, adjacent coils being adherent to each other. A coil of lower ileum was found, of which roughly half the circumference had evidently been strangulated, the strangulated portion still retaining the shape in which it had occupied the hernial sac. No obvious perforation was demonstrable but the herniated portion was covered with thick yellow recent lymph. The coil in which the strangulated area was situated was laid on the abdominal wall outside the peritoneal cavity, being fixed in position by a mesenteric stitch. The peritoneal cavity was thoroughly washed out with hot saline solution and a glass drainage-tube was placed in the pelvis. The wound in the groin was left open with a large rubber drainage-tube leading into the abdominal cavity. On the next day the general condition was favourable and the patient was in good spirits; the pulse-rate varied from 106 to 94, the respirations were 24, and the temperature was normal. The bowels were opened in the evening. The temperature rose to 100° on the 8th but otherwise was never above 99°. On the 7th the coil of

intestine was covered with lymph and granulations and was found to be slowly recovering its normal shape, the pouch-like projection of the herniated portion gradually disappearing. The bowels were opened three times. On the 9th, under an anæsthetic, the coil of intestine was replaced and the peritoneal cavity, which still contained some straw-coloured serum and lymph, was again washed out with hot saline solution. The wound was partially closed and a glass pelvic drainage-tube was inserted. The patient's further progress towards recovery was uninterrupted but she remained in bed until April 14th owing to the length of time required by the wound in the groin to close. She left the hospital on April 22nd in good health.

Remarks by Mr. LOW.—These two cases, occurring within a few weeks of one another, present many features of similarity, the most striking being the insidious nature of the onset. In the first one it was only on the fourth day of the illness that the case was considered sufficiently serious to require operation, while in the second the woman got about the house for the first four days of her illness and it was not till the eighth day that she was brought to hospital. Neither of the women on admission appeared collapsed nor did their facial or general aspect suggest the serious nature of their illness. In neither case was there abdominal rigidity, the abdominal walls moved on respiration, and only in the case of the first woman was there the slightest abdominal tenderness, the absence of this in the case of the second being most marked. In both cases the strangulated portion of intestine had slipped away from the hernial sac and was found in the abdominal cavity a short distance from the ring. Perforation had occurred in both cases, but in the second the perforation had evidently become closed by adhesive lymph.

The question of treatment presented many difficulties. In each case excision with immediate suture would have been the ideal method. In the first case this would have involved replacing the newly sutured bowel into the infected peritoneal cavity, while the line of juncture would have been exposed to considerable strain owing to the previous obstruction, the coils of small intestine above the hernia being filled with foul liquid fæces and only a small quantity of this could be drained away at the time of the operation. Bearing all this in mind I determined to drain the intestines for a few days by means of a Paul's tube and then, if the patient lived, to suture the intestine at a second operation. In the second case the effects of the intestinal obstruction were not so obvious when the abdomen was opened and resection with immediate suture was therefore rendered more hopeful of success. But in this case there was still the objection of replacing the newly sutured intestine into the foul peritoneal cavity and there was also the possibility that resection might not be necessary. I therefore decided to withdraw the injured coil from the peritoneal cavity and if in the course of a few days it did not recover to perform a resection outside the peritoneal cavity. This, however, was fortunately rendered unnecessary.

Reviews and Notices of Books.

Manual of Practical Ophthalmology. By GEORGE A. BERRY, F.R.C.S. Edin., Senior Ophthalmic Surgeon Royal Infirmary, and Lecturer on Ophthalmology, University of Edinburgh. With 223 Illustrations. Edinburgh and London: Young J. Pentland. Sm. 8vo, pp. 570.

IN 1893 Mr. Berry brought out a second revised and enlarged edition of his work on the diseases of the eye. The present volume is based on that treatise and contains the results of his more matured experience. In so progressive a subject as ophthalmology, which is in intimate relation with every other branch of medical knowledge, 11 years embrace a period of great advance in the pathology and in the treatment of disease generally and those advances are faithfully reflected by Mr. Berry so far as they affect the eye. Although large portions of the volume are only a repetition of the last edition, scarcely a paragraph remains without some addition or alteration. To give an example in the treatment of detachment of the retina, in the older work he remarks (p. 223) that removal of the subretinal fluid by puncture through the sclera has often been tried but without any marked success. In the new volume he says: "I have obtained the best results by repeated punctures made with a Graefe's knife pushed through from one side of the eye to the other in the region of the detachment." This proceeding, he considers, is always worth trying in young people, though it is useless in complete detachment and in old people.

Again, the results of riper knowledge are rendered evident by such sentences as the following. "The various diseases of the cornea are in all respects the most important of the common diseases of the eye. They are for the most part cases in which not a little good can be done by proper and judicious treatment and in which much harm may result from wrong interference or neglect. Their importance lies in this coupled with the value to vision of the normal cornea. There are other parts of the eye which are, of course, equally valuable in this respect, but of few of them can it be said with equal justice that the treatment is often of great importance in influencing the consequences of the diseases by which they may be affected." These remarks are succeeded by others bearing on the subject of opacities and alterations of curvature, on which the student will do well to ponder. In regard to colour blindness, which is now so important in the testing of the vision of persons in many avocations of life, Mr. Berry only mentions Holmgren's wool test, which, though good in itself so far as it goes, should, if possible, be supplemented with coloured lights at distances of 200 or 300 yards, a procedure not difficult to carry out where several hundred railway officials or sailors have to be examined and reported on. Mr. Berry has prudently omitted or considerably reduced the chapters in his earlier work dealing with the optical principles and physics of the eye (notwithstanding that the amount of mathematical knowledge required to understand them could be easily acquired by any earnest student), because the book is really a manual for the young practitioner who has not, as a rule, the time to devote to such subjects.

Mr. Berry has little to add to his former account of sympathetic ophthalmia. The pathology of that affection is still obscure. The conclusions to be drawn from clinical observation are for the most part suggestive of microbic inoculation, for the disease almost invariably follows a perforation of the sclerotic or cornea, especially in the ciliary region. The injured, or exciting, eye long remains soft and tender in the neighbourhood of the wound, conditions that are favourable to absorption or entrance of micro-organisms, of which there are many forms in the conjunctival sac, into the lymphatic and vascular systems; and, lastly, a week or two usually elapses before sympathetic inflammation is excited in the sympathising eye, as though time were an element in the transmission. On the other hand, neither experimental nor bacteriological evidence has been obtained of the presence of any particular organism in either eye. Mr. Berry, however, remarks that this does not preclude the possibility of the transmission of toxins formed by the action of germs from the exciting eye into the sympathising eye. In regard to the treatment to be followed, whilst the general rules laid down in regard to the removal of the injured eye are sound, sufficient stress has hardly been laid on the value of complete rest of the eyes in a dark chamber for several days. An attack otherwise imminent may thus sometimes be warded off.

In speaking of the operations for the extraction of cataract Mr. Berry seems to prefer the combined method, that is, the method in which an iridectomy is performed, but he also approves in favourable cases of simple extraction. He insists, however, on making a large conjunctival flap, to which the objection may be raised that considerable

hæmorrhage sometimes occurs which, entering the anterior chamber, obscures the subsequent steps of the operation. We read with some surprise the statement made by Mr. Berry that his own experience of Mules's operation has not been particularly encouraging. In a great many cases, he says, the glass ball seems to be expelled sooner or later by ulceration of the overlying tissues. Such results were probably due to the introduction of too large a ball in the anxiety to obtain a good and prominent bed or possibly in the too early insertion of the shell or artificial eye. Some weeks should be allowed to elapse before this is worn and then it should be worn only for a few hours at a time. Mr. Berry seems to have been fortunate in his experience of Bowman's method of slitting up the canaliculus in cases of watery eye, as he states that "all that is necessary as a rule to cure the watery condition of the eye is to convert the canaliculus into an open rill." That this proceeding is sometimes successful is certain but the student should be warned that it is unwise to promise a cure, whilst it *may* happen that the patient is worse off after than before the operation. Large probes may sometimes be passed through the nasal duct with no consequent relief to the "watery eye." Slight cases are better left alone.

We commend the book to the student and the practitioner as one on which reliance can be placed and which may be consulted with advantage in any of the emergencies of ophthalmic practice.

Epilepsy and its Treatment. By WILLIAM P. SPRATLING, M.D., Medical Superintendent of the Craig Colony for Epileptics, New York. With 16 Illustrations in the text and 30 Plates. London, Philadelphia, and New York: W. B. Saunders and Co. 1904. Pp. 522. Price 18*s.* net.

THE great progress made in the knowledge of epilepsy and its treatment during the past decade and a half and the fact that no complete treatise on the subject has appeared in the United States during the past 30 years were the chief reasons that led to the preparation of this volume by Dr. Spratling. It includes definition and classification of the subject, together with etiology, diagnosis, prognosis, pathology, psychological and medico-legal aspects, and treatment. The author's work is the result of his experience as medical superintendent of the Craig Colony for Epileptics during a period of ten years.

In classification four types of epilepsy are recognised by the author—viz., *grand mal*, *petit mal*, Jacksonian epilepsy, and psychic epilepsy. Etiologically epilepsy is regarded as a morbid or degenerative nervous affection dependent on a similar condition in the parent more frequently than on any other single cause, while the author's statistics bear out the view that 80 per cent. or more of all cases of epilepsy begin before the twentieth year. Methods of physical examination of patients are given in the early chapters. From a critical survey of the statistics of Great Britain, France, Belgium, and the United States the incidence of epilepsy upon the general population is shown to be high but not nearly so high as that of insanity. One epileptic to 500 inhabitants is the estimate for the United States. The circumstances of age, sex, race, and occupation in their relation to epilepsy are dealt with in some detail. Heredity is made the subject of a specially interesting chapter which also sums up the other etiological factors.

The more strictly clinical part of the work occupies Chapters VI. to X. The subjects dealt with are the different types of epileptic seizures, including rare forms such as psychic epilepsy and hystero-epilepsy, the status epilepticus, forms of epileptic aura, the casualties and sequelæ of fits, the post-epileptic state, and the diagnosis of epilepsy. The various clinical and diagnostic features are detailed with care and clearness. Much statistical knowledge is presented from the collected records of Craig Colony as to the frequency and character of many of the clinical phenomena. A chapter on Prognosis concludes the early half of the volume. The average age of onset of epilepsy, concludes Dr. Spratling, is between ten and 20 years and the majority of those who die through its effects do so before middle age is reached.

The second half of the book is devoted to the pathology of epilepsy, to general treatment, including life in a farm-colony, and to medical treatment by drugs and other therapeutic measures. "In a disease in which [like epilepsy] etiology and pathology are obscure," says Dr. Spratling, "treatment must be more or less empirical. ..... This applies even to the use of bromides." An account is also given of the recent work done in the serum treatment of epilepsy. The question of trephining in cases of epilepsy with focal indications of brain lesion is carefully discussed and the conclusion is drawn that the majority of those operated on experience no benefit, while about a fourth are somewhat benefited. Under antiseptic precautions little danger is to be feared from the operation itself. A fairly full account of the psychological and medico-legal aspects of epilepsy concludes the second portion of the work.

Dr. Spratling's work is written throughout in a clear and readable style. The plates and illustrations are useful and excellent; the former would be hard to surpass. While not aiming at monographic completeness the work is a mine of information on the whole subject of epilepsy and its treatment and should be in the hands of every alienist and physician who has the care of epileptics in farm-colonies and similar institutions.

A Compendium of Chemistry, including General Inorganic and Organic Chemistry. By Dr. CARL ARNOLD. Authorised translation from the eleventh enlarged and revised German edition, by JOHN A. MANDEL, Sc.D. New York: John Wiley and Sons. London: Chapman and Hall. 1904. Pp. 627. Price 15*s.*

THIS work has had a large circulation in Germany amongst students and professional chemists and its popularity there has induced Dr. Mandel to undertake its translation into the English language. Dr. Carl Arnold, the author, is professor of chemistry in the Royal Veterinary School of Hanover and his success as a teacher is due to his faculty of clearly expounding both principles and facts. It is no small achievement to be able to deal with the whole of the principles and facts of chemistry in a comparatively small volume such as is the one before us. Yet this compendium, a word by which the translator has rendered the word "Repetitorium" of the German text, comprises general inorganic and organic chemistry. Nor have modern advances escaped the author's attention. The work is divided into three parts and the first part on general chemistry is, we venture to think, the best example of the author's power as an exponent. The sections in this part on theory and on recent developments in physical chemistry are excellently clear. As an example may be quoted his explanation of the action of ions. "The more completely an electrolyte is associated," writes Dr. Arnold, "the greater is its conductivity and its chemical activity since it is the free ions only which react. For example, hydrogen chloride when dissolved in chloroform does not act on carbonates, since in this case no dissociation of HCl is possible." The importance of the ion theory in physiological chemistry is also pointed out. As an example is quoted the poisonous action of certain metallic salts which is proportional to their dissociation and therefore alcoholic solutions of mercuric chloride or silver nitrate in which the salts are less dissociated than in their aqueous

solutions are not fatal to anthrax bacilli. There can be little doubt that the theory of ions will have a very marked bearing on many points in medicine and we are therefore glad to find that this remarkable development of chemical theory is adequately treated. We pass over the second part of the work which deals with the chemistry of the inorganic elements. It may be said, however, that the author classes radium under the uranium compounds. Part III. deals with organic chemistry and here the author is just as clear as he is concise in the treatment of such subjects as constitution, substitution, stereoisomerism, and so on. Still, he finds space to deal with the terpine group, bitter principles, protenes, albuminoids, enzymes, and alkaloids. In short, the book is an excellent example of what a chemical text-book should be.

Le Soignage Médical et les Infirmières (*Nursing and Nurses*). By Dr. MARC BLATIN. Paris: J. B. Baillière et Fils. 1905. Pp. 276.

THIS little work, which is from the pen of a French physician of considerable experience in both hospital and private practice, is in effect a plea for general reform in all branches of nursing in France. The author reviews and contrasts the systems of training which obtain in his own country and in England, and it must be admitted that the conclusions at which he arrives are distinctly flattering to our own systems and to the *personnel* of the nursing staffs of our hospitals and public institutions. There are two factors which the author holds mainly responsible for the contrasts—so unfavourable to his own country—which can be drawn between the two national systems The first and most important of these is that while in France the nursing profession is recruited from an ignorant and humble class, in England the solid advantages of the occupation attract women who by birth and education are upon a higher social level. Although the author recognises that reforms are inevitable he believes that the change will only be effected slowly, for the reason that most of the large French hospitals are under central and Government control. Although perhaps all authorities will not agree with Dr. Blatin that centralisation of hospital administration is a barrier to progress, it must, indeed, be admitted that the *personnel* of the nursing staffs and the general standard of nursing are also very inferior in Poor-law municipal institutions in England as compared with those which are under the management of independent boards. Dr. Blatin insists that before most of the reforms which he suggests can be carried out in practice it will be necessary to educate the public to take an entirely different view of the status of the nurse. At the present moment she is regarded and treated simply as a domestic. It occurs to us that this view rather puts the cart before the horse. When the French nurse ceases to be a domestic in education and instincts she will assuredly receive the consideration to which her social status and improved education entitle her. We are certainly in greater agreement with the desirability of another step which Dr. Blatin considers necessary to obtain his object and that is that the comfort of nurses should be more closely considered in those institutions in which they receive their training. Among the many useful suggestions which Dr. Blatin makes for the satisfactory training of nurses, and especially of those who intend subsequently to engage in private nursing, is one that they should attend courses and lectures on invalid cookery; he says that such are provided in most of the English hospitals. We only wish that this were the case. Although this little book will have no particular interest for English readers we can quite imagine that its plea for reform will have an excellent effect in stimulating the somewhat slow-moving authorities of French hospitals to a sense of their responsibilities as far as the nursing of patients is concerned and to a sense of the possibilities which are open to them in the way of more systematic training of their staff and probationer nurses.

LIBRARY TABLE.

A Laboratory Manual of Organic Chemistry for Beginners. By Dr. A. F. HOLLEMAN. Translated from the Dutch by A. JAMIESON WALKER, Ph.D., B.A. New York: John Wiley and Sons; London: Chapman and Hall. 1904. Pp. 78. Price $1.—This laboratory manual is an appendix to the author's text-book of organic chemistry which was reviewed in THE LANCET of Nov. 21st, 1903. Its object may therefore be taken to be to give the student help when the opportunity arises for handling the compounds concerning which he is being instructed. The plan of the book is progressive. In the opening chapters the qualitative analysis of carbon compounds is described. Here simple methods for the detection of carbon hydrogen, nitrogen, sulphur, and the halogens are given. Next are described such laboratory methods as fractional distillation, determination of melting point and boiling point, extraction with solvents, and so on. The remainder of the book is devoted to the detection of organic compounds, including sections on the tests for alkaloids and the examination of albumins. The book affords an admirable laboratory companion to the author's text-book already referred to and an intelligent use of both would give the student a very excellent groundwork in organic chemistry.

Nature Teaching based upon the General Principles of Agriculture for the Use of Schools. By FRANCIS WATTS, B.Sc., F.I.C., and WILLIAM G. FREEMAN, B.Sc., A.R.C.S., F.L.S. London: John Murray. 1904. Pp. 193. Price 3*s.* 6*d.*—This little book was originally written for use in the West Indies with the intention of arranging the courses of study both in secondary and in primary schools, being employed as a text-book in the former, while in primary schools it is used by the teachers in preparing and formulating their teaching. As it was found so useful in the West Indies Mr. Watts (who is the Government analytical and agricultural chemist, Leeward Islands) has, with the assistance of Mr. Freeman, issued the present edition which has been written to meet the circumstances of British conditions. Elementary nature teaching admits a wide range of subjects and individuality plays an important part, but if good work is to be done it must be impressed on the teacher that the pupils must do things for themselves. For this reason but few illustrations are used in the book lest the pupils, seeing how things appear in the illustrations, may be tempted to shirk the effort of seeing the natural objects for themselves. In the appendix suitable courses of work are indicated according to the time of year at which the work is begun. In connexion with school gardening it is recommended that the elements of a simple drill should be introduced into the outdoor work and that in the working plots themselves the work should be carried out in a similar manner to that of a laboratory. The authors lay stress on the instruction that in all work drawing, measuring, and weighing should be insisted on. The book is divided into nine chapters which treat successively of the seed, the root, the stem, the leaf, the soil, of plant food and manures, of flowers and fruits, of weeds, and of the animal pests of plants. The chapter on Plant Food and Manures is excellently arranged and most instructive and the one on Animal Pests of Plants is very practical. When speaking of the remedies against damage to crops by injurious insects the authors write that "full directions concerning the use of many of these [insecticides] are to be found in the excellent leaflets of the Board of

Agriculture." Perhaps the information contained in these leaflets might with advantage have been included in this volume. The book is very simple and very practical and may be of great use if adopted in schools in this country.

Radium and other Radio-active Elements. By LEONARD A. LEVY and HERBERT G. WILLIS. London: Percival Marshall and Co. 1904. Pp. 105. Price 2*s.* 6*d.*—This little work is described as a popular account of radium and other radio-active elements treated experimentally and the authors have evidently taken pains to collect the latest information upon the subject. Setting out with an excellent object in view they have succeeded in putting together some valuable material, though occasionally their descriptions are wanting in clearness and a want of order is noticeable in the presentation of the facts. No apology need have been offered, we think, for the statement that the various theories of the sources of the radiation have received no attempt at explanation. A completely satisfactory explanation is not yet forthcoming even from the great masters. The merit of this little book, however, is its experimental character, although, unfortunately, the price of radium salts is calculated to deter many experimentalists. The authors have allowed themselves here and there to lapse into loose statements of which the following is an example: "The last decade has witnessed discoveries which have rendered possible the photography of the bones of a living being." The achievements of the x rays are wonderful but after all they merely effect the photography of shadows. If a telegraph pole were interposed between the sun and the sensitised screen the record would be the shadow of the pole and not a photograph of the pole itself. A photograph of the bones of a living being, as, for instance, of the skeleton, is a different thing from the impressions given on the sensitised plate by the shadows of the bones cast by the x rays.

A Guide to Medical Officers on Field Service, more especially Civilian Medical Officers and Junior Officers of the Royal Army Medical Corps. By Major J. S. EDYE, R.A.M.C. (Gale and Polden's Military Series.) Aldershot: Gale and Polden, Limited. 1904. Pp. 35. Price 1*s.* net.—The nature and object of this little publication are correctly and sufficiently set forth in its title. It embodies a great deal of information in a highly compressed form on all those official details and matters which come before a medical officer in the course of his duties and with which he has to be more or less acquainted in order to deal with them promptly and successfully when on field service. In glancing over its pages the reader will be surprised at the number and variety of duties of a quasi-military character which fall to the lot of an army medical officer to undertake or to know something about. On all these points this little book, it seems to us, supplies quite the sort of information that is required and in the most concise and accessible form practicable.

£300 per annum from 30 Acres: or, a Modern Bee Farm and its Economic Management. By S. SIMMINS. London: Woodford, Fawcett, and Co. 1904. Pp. xii.-405. Price 5*s.*—In placing this work before the reader Mr. Simmins says that it is his intention to adhere strictly to the science of practical bee-keeping. With few exceptions the instructions contained in the book are confined to the author's own experience which has extended over 30 years of close observation. He places the management of bees before the novice and those who wish to become bee-keepers in as clear and straightforward a manner as possible; simple matters are therefore gone into at length that the learner may profit by the author's own early experiences. At the same time he expresses a hope that the expert will find some things in the volume not known before to the bee-world. While there is no fortune to be made by bee-keeping it is a light and pleasant occupation and all may gain health and pleasure in following the study of one of the most remarkable creatures in the insect world. "The man who finds himself adapted to the undertaking may safely invest his money and be assured of obtaining better returns than very many other occupations offer at the present day." The author endeavours to show how a minimum profit of £300 per annum may be secured from 30 acres of grassland by making the most of everything that can be worked upon it, so that one branch of agriculture may help another. If the season is unfavourable for one item it is often even more suitable for some other of the several occupations carried out upon the farm of moderate dimensions. Work in some established apiary for two years is recommended to the would-be bee-keeper. Mr. Simmins's manual is well written, thoroughly practical, and a real guide to his subject. The work is fully illustrated.

JOURNALS AND MAGAZINES.

The Practitioner.—An excellent article by Dr. F. W. Mott opens the number of this magazine for the present month (September). Dr. Mott writes upon tremors, giving a clear classification and some capital graphic reproductions of tremor due to various organic diseases and to poisoning. Another article dealing with nervous disorder is supplied by Dr. W. L. Ascherson who discusses the distinctions between hysteria and neurasthenia and their association with other diseases. He gives cases illustrative of his reasoning and his article can be read with pleasure. Mr. P. J. Freyer continues his contribution on enucleation of the prostate, the illustrative plates being particularly good. The journal includes also contributions from Dr. S. Vere Pearson on Tuberculosis in Early Childhood, from Mr. J. Jackson Clarke on Paralytic Deformities, and from Dr. J. Blumfeld on Anæsthetics.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S.; W. F. R. WELDON, F.R.S.; and SYDNEY J. HICKSON, F.R.S. With lithographic plates and engravings on wood. London: J. and A. Churchill. Vol. XLVIII. Part II., September, 1904. Price 10*s.*—This number contains: 1. A long and important memoir by Professor Lankester on the Structure and Classification of the Arachnida, which is a reprint of his essay on this subject published in the tenth edition of the "Encyclopædia Britannica." It is illustrated by many woodcuts. 2. Some New Species of the Genus Phreodrilus, by W. Blaxland Benham, D.Sc. This genus is one of the oligochætous worms. Three species of phreodrilus are here described, which the author names Phreodrilus lacustris, Beddardi, and Mauiensis. They were all obtained from the lakes of New Zealand. The article is accompanied by three plates which give the details of the anatomy of these worms. 3. A New Species of the Genus Haplotaxis with some remarks on the Genital Ducts in the Oligochæta, by W. Blaxland Benham, D.Sc., with three plates. 4. The Œstrous Cycle in the Common Ferret, by Francis H. A. Marshall, D.Sc., with three plates. Dr. Marshall finds that the female ferret is monœstrous but many have one, two, or three sexual seasons within a year; the "heat" periods are usually restricted to the spring and summer months, the autumn and winter being occupied by a prolonged anœstrum. 5. Two New Forms of Choniostomatidæ, which are Copepoda parasitic on Crustacea, Malacostraca, and Ostrocoda, by H. J. Hansen, D.Sc., of Copenhagen, with a plate.

THE SEWERAGE OF BOVEY TRACEY (DEVON).—At Bovey Tracey, on Sept. 14th, Colonel A. Durnford, on behalf of the Local Government Board, held an inquiry into the application of the Newton Abbot rural district council to borrow £7000 for sewerage and sewage disposal for Bovey Tracey.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 24, 1904.

Motor Vehicles and the Public Roads.

LETTERS to our contemporary the *Times* are justly regarded as indications of current opinion on the part of the British public. The text of many of these letters just now is the dangers and nuisances caused by motor-cars. We are not concerned with these actual letters, though it is impossible to avoid the conclusion that the manner in which the case has been stated against the motor-cars is more dignified, sympathetic, and considerate than the manner of the other side. The question is one full of minute difficulties and demands careful and judicial consideration on the part of the medical profession for there is no section of the community which is more concerned in the safety and ease of travel by road. Moreover, there is no class of men who will, within the near future, probably use motor-cars in their daily work to the same extent. We should not therefore allow our minds to be prejudiced unduly by the inconveniences and the dangers of the present. But nevertheless there is no class of educated men so well able to realise that the stern indictment drawn against motor-car drivers by Dr. SOPHIA JEX-BLAKE and others carries a true bill. To have driven with a medical man in country practice in parts of the home counties this summer is to have learned in a few days that the present use of the roads by motorists is dangerous and selfish. There are no better judges of such a question than country practitioners; they live on the roads, they drive seasoned horses not given to "nerves," they are from sheer practice good whips, and they are men whose daily life and work teach them consideration for others. There is no question that the allegations made against motor-cars have grave foundations. The properly trained driver or owner, particularly one who has had previous experience of the roads in charge of horses, gives no ground for offence, but the half-trained amateur and the reckless professional chauffeur do things which astonish and appal those who meet them. We have been shown by-lanes so narrow that in many parts two vehicles cannot pass and so winding that 200 yards are rarely visible ahead along which a racing Napier has been run for a dozen miles at a speed which distressed its occupants; we have seen a hill so steep that no local driver would permit his horse to trot down it but down which a four-cylinder Panhard car was launched at such a speed that two tyres burst at the bottom in attempting to round a corner and a disaster as appalling as that which recently occurred near Wicklow was averted only by mere chance. The excuse offered is that the driver did not know that the hill was so steep and that there was a corner at the bottom. The navigator of a valuable steam launch does not force it up a backwater of the Thames in ignorance of what may be in front but owners of costly cars, having neither maps nor knowledge of the country, rush them through narrow hilly lanes and run them at 15 miles an hour through small towns and villages along the narrowest roads, ignorant of the gradients and careless of the corners. We noticed the other day the track of a big car which we had just met and which had run through a tortuous line of streets and roads in a small town, taking almost every corner on the wrong side.

It is no exaggeration to say that the amenities of road travel in the home counties are being totally destroyed. There is no pleasure in riding a hack when the fate which recently nearly overtook Sir EDWARD BRADFORD (a fine horseman, we believe) may be coming on us at every corner. No girl home from school can ride her pony on Saturdays in Kent or Surrey now, for most motorists do not even know the proper side on which to pass a led horse. Few drivers of cars seem to be aware that it is not good manners to rush past another vehicle at top speed and that to change gear in the clumsy way in which so many drivers do change gear alongside a carriage is as offensive as it would be to shout at or to lash the horses of a passing vehicle. The slaughter of dogs in village streets is most callous and discreditable; our readers in small country towns and villages, since they dwell usually in the main street, need no reminders. They will appreciate also that all their front windows must be shut on Saturdays and Sundays because of the dust, that the hooter and the grinding change of gearing make Sunday afternoons hideous, while to step off the curb in front of the house without a glance each way along the street is as safe as to cross the metals at Finsbury Park. The accidents to life and limb, the widespread dangers to children, bicyclists, and old and infirm people, are all due to lack of consideration. There is no excuse for it for the average motorist is a man of leisure when on his car; moreover, the modern car is capable of great "flexibility" of speed and its pace can be reduced by a touch, but many drivers will neither lower their gear nor shut their throttles: they run ahead and blare upon their hooters. The two worst offences on the road are the maintenance of high speed in the centre of the track until close to an approaching horse and keeping the wrong side at corners. Horses may be trained to motor-cars for years but to run a large powerful car straight at another vehicle at a speed of over ten miles an hour in a narrow road and to deflect it at the last minute is more than most horses care about; a horse knows nothing about the subtleties of steering gear and sometimes even the steadiest will turn. To run corners on the wrong side at any speed is no less than a crime, since it is rarely possible in the narrow hedge-bordered roads of England to see sufficiently ahead to avert the serious accidents to children and animals which occur every week. We write in full knowledge of the value of modern steering gear and of the control afforded by clutches and clutch-coupled brakes but we are unpleasantly cognisant also of the laws of momentum and the working experiments instituted by the Automobile Club in the sudden arrest of heavy cars running at high speeds. The vast majority

of these "accidents" are preventable and should be prevented. A better sense of responsibility in driving motor-cars than has hitherto existed should be established. The legislation of last year is a complete failure. To follow the cases reported in the police-courts is to realise that the punishment for offences is in no way deterrent, that too much stress is laid on the actual pace of locomotion and too little on the exigencies of the roads in use, while no attempt has been made by local authorities to enforce the provisions of the Act of 1903 which empowers county councils to limit speed within any areas or "places" which they may select, subject to the ratification by the Local Government Board of their restrictions.

We write not only on behalf of the general public who have to use the roads but also in the interests of motor-cars; medical men use them largely now and will use them more largely after the extremely satisfactory trials of small cars[1] which the profession has been recently watching with much interest. If the conduct of motorists is such as to create a deep feeling against them which will be reflected in the actions of the county councils, limitations on the use of by-roads may be imposed which will be irksome to motorists in general, but which will be peculiarly prejudicial to the use of horseless vehicles by the class of professional men who need them most and who will unquestionably be valuable customers to the automobile industry in the near future. There are a large number of excellent journals devoted to motor-cars but it is to be regretted that they do not seem to employ the influence which undoubtedly they possess to train the neophytes of motoring in the important items of careful and considerate driving. One well-known manual, which has reached a third edition, has a full-page illustration of "how to take a corner"—namely, on the wrong side of the road. It is true that the letterpress contains instructions stating when the illustration should not apply but the picture is far more obvious than the letterpress and has doubtless had regrettable results. One of the best periodicals contained in the spring of 1903 instructions, with diagrams, for getting the shortest line of travel on a winding road, which involves for the better maintenance of equilibrium round curves the cutting of corners on the wrong side of the road. Both tutors and pupils think but of the speed and learn only the lesson of safety at the expense of disaster. All this must be changed and then the motor-car will take its place as an unobjectionable, as well as a most useful, means of locomotion.

The Practical Teaching of Gynæcology.

THE great strides which the art and science of gynæcology have made in the last few years have much increased its importance as one of the subjects of the medical curriculum. The standard of knowledge required of the student is now much higher than it was and the examinations are correspondingly more difficult. *Pari passu* with the development of the subject the teaching no doubt has improved but there is still much to be done in this direction. It may well be said that the two subjects of the medical curriculum which are most inadequately taught from the practical point of view at the present time are midwifery and gynæcology. Nor is the reason for this far to seek. It lies in the difficulties which surround the practical teaching of these two subjects—difficulties which in this country at any rate very little attempt has been made to overcome. There is perhaps no subject in the whole range of the student's career in which clinical teaching is of such importance, while the difficulties surrounding the proper carrying out of such teaching and the adequate examination of cases of pelvic disease are very considerable indeed. If the student requires constant practice to enable him to examine a case of heart or lung disease properly and systematically, how much more does he require such practice in the bimanual examination of the female pelvic organs? Yet from the very nature of the class of case it is often impossible for a student, no matter how energetic he may be or how keenly he may seize the opportunities afforded him, to become really expert in such examinations. The number that can examine any one case is strictly limited and the opportunities are correspondingly few. In our experience men are often loth to examine the patients and require constant urging to make them seize all the opportunities that are afforded them, nor is this frame of mind to be wondered at. Many of the gynæcological out-patient departments in our large general hospitals are flooded with a number of cases of no value from the teaching point of view and the time of the out-patient physician is only too often taken up with such cases with the result that his opportunity for teaching is markedly curtailed.

It is a disheartening fact that there is no provision for any student who wishes to make a specialty of gynæcology to pursue his studies in London. It is true that if he has the time he can sometimes obtain a clinical assistantship at one of the special hospitals, but even there he is left more or less to his own devices, while of proper post-graduate teaching with an opportunity of carrying out a large number of pelvic examinations there is no provision at all. Constantly have we had to advise a student wishing to obtain a special course of instruction in gynæcology to go abroad to one of the foreign clinics. This is a condition of things which should not exist in the largest city in the world. It is the more to be deplored because the student sometimes in these circumstances must enter on his professional career without a sufficient amount of practical training to enable him to say with certainty whether the pelvic organs in any patient are normal or not. It must be confessed that the difficulties in the way of ensuring that every student shall be as competent to examine the pelvic organs as he is to examine the chest are very great. That they are not insuperable in the case of a small number of candidates for an examination is shown by the fact that at the last London M.D. examination in obstetric medicine arrangements were actually made by which a practical examination in gynæcology was conducted satisfactorily.

It will only be when the various examining bodies make a move in this direction that we shall see any marked improvement. With the increased tendency to treat so many of the diseases of women by operation the importance of accurate diagnosis becomes greater and greater. The

[1] An account of these trials was given in THE LANCET of Sept. 10th, p. 799, and they are referred to also in another column of our present number.

fact that abdominal sections at the present day can be carried out with such certainty and security to the patient is likely to cause the practitioner in the press and hurry of work to lay less stress than he should upon the elucidation of all the minute physical signs of a case of obscure abdominal disease. It is, of course, true that the detection of the minutest differences in the physical signs of any particular case is often of not the least importance in the prognosis or treatment of the condition but at the same time it affords the highest form of practical training both for the student and for the teacher, and its importance from the point of view of the education of the student cannot be overestimated. The great masters of clinical medicine considered no minute difference in the physical signs of any case too unimportant to be taken into account or to be pointed out. When we find, however, examinations in gynæcology carried out without any practical test at all we cannot expect students to spend much time in the acquisition of knowledge which seems to be of no immediate value to them according to their often ill-judged notions of what is valuable in their training and what is not. It is indeed only of recent years that it has been obligatory on the student to take a clerkship in the gynæcological outpatient department or in the women's wards. Let us hope that before long we shall find the various examining bodies insisting on some evidence that the candidates who present themselves for their diplomas have something more than a mere book knowledge of so important a subject, one in which improper treatment can do so much mischief and one in which the practical training of the medical student at the present time is more imperfect than in any of the other subjects in which he has to present himself for examination.

The Hygiene of the Barber.

MANY are the possible channels of contagion and the spread of disease is enormously assisted by most of the facilities and conveniences of modern life. The gathering together of human beings in masses will always tend to promote the transference of germs from the diseased to the healthy. Everything used in common must teem with bacteria, from the cab or the omnibus to the telephone or the speaking-tube. THACKERAY, in his "Book of Snobs," laughed at the fastidiousness of some clubs where it was considered necessary to wash silver coins before offering them to members. Those, however, who bear in mind the frequency with which coins are held between the teeth by omnibus conductors and others while finding change or who have seen them used as weights to keep down the eyelids of the dead are not likely to level sarcasm at such a desirable hygienic practice as washing money. We do not in the least undervalue the very extensive increase in primary education during recent years but it is impossible to doubt that elementary schools have done much to spread scarlet fever, measles, and diphtheria, to say nothing of much less dangerous diseases such as ringworm and impetigo contagiosa. Convalescent homes and country camps all tend to promote the extension of zymotic diseases by crowding together many people. With so many channels of contagion it might appear to be almost hopeless for us to attempt to avoid infection but fortunately the risks may be easily exaggerated. Indeed, some have maintained that the risks are so slight that it is needless to attempt to prevent contagion. It is true that some may live long and healthy lives without having adopted any precautions but the fact that contagion does spread and in the most varied ways shows that if protection can be obtained with a reasonable amount of trouble it is worth the attempt. In some directions in which the risks of the transmission of disease are especially great much may be done by way of prophylaxis. There is one occupation which undoubtedly is a fruitful channel of the dissemination of disease and that is the hairdresser's. The hands of the barber and the utensils which he employs come into very intimate contact with the scalps and the faces of the persons on whom he operates, and should any disease be present the chance of its spreading is very great indeed.

In the ordinary operation of hair-cutting the scissors may convey disease but still more likely is disease to be spread by the brushes and there is hardly anything more difficult to disinfect than a brush. Very slight observation of the ways of most hairdressers will show that no attempt is made to cleanse frequently the brushes employed. The rotating brushes, which are extensively used, are probably even more successful in transferring micro-organisms than the hand-brushes, for the former are brought more forcibly and intimately in contact with the skin of the scalp. It is not unusual in cases of ringworm of the scalp for a scaly patch to remain after the reappearance of the hair; in these cases, although the disease is apparently cured, the fungus is still present in large numbers. We have known of an instance of this condition in which a careful parent took a child to a hairdresser to have the hair "brushed by machinery" in order to remove the scaliness. Who can estimate the number of cases of ringworm which may have resulted from that single case? At the present time few dermatologists doubt the bacterial origin of seborrhœa capitis, though there may be less unanimity as to the micro-organism responsible for the condition and the very great prevalence of the disease is probably in part at least due to the brush of the hairdresser, for it cannot be doubted that nearly every brush of almost every hairdresser in the whole country is infected with it. The other branch of the hairdresser's art is even more likely to lead to the transmission of disease, for in shaving the skin is liable to be wounded and thus points of entry are provided for micro-organisms. Even when no wound is made several diseases may be transferred. Some forms of impetigo are perhaps the most common and other manifestations of the ordinary pyogenic organisms are also found. A form of ringworm is also not very rare on the chin, always, or nearly always, due to the presence of the trichophyton megalosporon ectothrix, and this is certainly in many instances contracted during the process of shaving. This disease, with the manifestations of the pyogenic cocci, constitutes what is popularly known as "barber's itch" and the name indicates the popular attribution of the source of the malady. The contagious variety of alopecia areata of the chin is also doubtlessly spread by the operation of shaving and at the last meeting of the International Dermatological Congress in Paris a case was quoted in which a barber naïvely remarked that he had had many examples

of the disease lately amongst his customers. In all the diseases that we have mentioned it is highly probable that the shaving brush and not the razor itself, is responsible for the transference of the disease, though it is difficult to prove this. When it happens that the razor causes a small wound of the skin the barber sometimes contents himself with the temporary pressure of a finger or he may employ a stick of alum. Either method might lead to the inoculation of syphilis, without mentioning other less serious diseases. That this is so is shown by the occurrence of primary sores at the sites of razor cuts. The powder-puff is a further source of possible infection and should be discarded. The frequency with which the more common of the diseases to which we have alluded occur in different countries and in different ranks of life varies greatly and depends mainly on the relative frequency with which men shave themselves or go to barbers to be shaved. To take this country in the lower classes it is comparatively rare for a man to shave himself and therefore these diseases, produced by the barber's instruments, are much more rife than in the higher classes where probably the majority of men shave themselves. In Germany and the United States the greater prevalence of these diseases is associated with the greater frequency with which men in those countries resort to the barber to be shaved.

So much for the facts. We have endeavoured in our recital of the ills that may follow the practice of the art of the hairdresser and the barber not to speak in the tones of the alarmist; but the danger is real and cannot be disregarded in a civilised community which recognises that the prevention of transmissible disease is one of the more important functions of a government. Has anything been done to prevent or to mitigate the dangers arising from hair-cutting and shaving? In the British Isles absolutely nothing has been attempted as yet but we understand that the corporation of the City of London, at the instigation of its energetic medical officer, Dr. W. COLLINGRIDGE, is considering a report on the subject in which are detailed the regulations in force in foreign countries. Some ten countries have adopted regulations for controlling hairdressers and barbers and amongst them are Japan, some parts of the German Empire, Sweden, the State of New York, and even Uruguay and San Salvador. All the regulations in these different countries have a family resemblance and indeed are just those which would suggest themselves to anyone acquainted with the dangers to be avoided. In considering what regulations should be imposed it is clear at once that the employment in common of any instrument should be restricted as much as possible. If every customer could have his own brushes, his own razors, his own towels, and his own soap there could be no infection from one customer to another and the only danger to be avoided would be the transference of disease from the barber himself. This exclusive use of the instruments employed is almost a counsel of perfection and is rarely attainable but much less will serve to minimise the risk. In the first place it is essential that the hands at least of the hairdresser should be free from disease and he should have no contagious skin disease of any part of the body. This is so obvious that no more need be said on this point. He should be clothed in a clean washable garment which should have no pockets, for in these hairs tend to collect and to infect scissors and brushes. Between every two customers the hairdresser should wash his hands and thus remove much of the risk of carrying infection. Facilities for the assistants washing their hands should be provided in all hairdressers' shops. Every customer should have a fresh towel, and the head, in shaving, should rest on a clean piece of paper or a fresh towel. Paper is very convenient as the cost is so minute. Where a customer is in the habit of going regularly to be shaved it would be very desirable that brushes and razors should be reserved for his exclusive use and this especially applies to the shaving brush. All implements should be submitted to disinfection, but as we have already mentioned brushes are very difficult to disinfect; ordinary washing in soap and water is valuable but the use of formalin is probably advisable. It is easy to disinfect a razor by boiling but the edge is liable to suffer, though the Conseil d'Hygiène of the Seine claims that even ten minutes' boiling in soap and water will not harm the edge. We confess that we have not tried it on razors but every surgeon will agree that ten minutes' boiling will remove a good deal of the keenness of a scalpel. Combs, which should be of metal, and scissors can easily be disinfected by boiling. The use of a stick of alum should be prohibited, for it certainly becomes stained with blood and may easily spread disease. Powder-puffs should be replaced by pieces of cotton wool, which can be burned after use. Lastly, we put a most important regulation: no one suffering from any obvious disease of the scalp or face should be served in a public hairdresser's shop. It may be urged that such elaborate regulations as those which we have suggested cannot be carried out or even that they are unnecessary but no dermatologist will dispute their importance or their expediency, for he will have seen how very prevalent are the diseases contracted in the barber's shop.

Annotations.

"Ne quid nimis."

THE VISIT OF FRENCH MEDICAL MEN TO LONDON.

THE arrangements with regard to the forthcoming visit of our French colleagues to London on Oct. 10th, 11th, and 12th, are now taking shape and we are informed that the organising committee in Paris has announced that the following professors of the Faculty of Paris will be amongst our visitors—namely, M. Berger, Professor of Surgery; M. Blanchard, Professor of Natural History; M. Chantemesse, Professor of Hygiene; M. Chauffard, Professor of Medicine; M. Le Dentu, Professor of Surgery; M. Huchard, Professor of Medicine; M. Lucas-Championnière, Professor of Surgery; M. Peyrot, Professor of Surgery; M. Ricard, Professor of Surgery; M. Lepage, Professor of Obstetrics; M. Marie, Professor of Medical Pathology; M. Netter, Professor of Diseases of Children; M. Hallopeau, Professor of Dermatology; M. Porak, Professor of Obstetrics; and M. Reynier, Professor of Surgery; whilst there is a probability of the following gentlemen also coming—namely, M. Bouchard, Professor of General Pathology; M. Gariel, Professor of Physics; M. Gautier, Professor of Chemistry; and M. Gaucher, Professor of Dermatology. Some 25 physicians and surgeons to the Paris hospitals, as well as some

representatives of provincial schools, have also expressed their intention to join the party. It is expected that altogether our visitors from France will number from 130 to 150 and we are certain that the English medical profession, especially those resident in London, will exert themselves to the utmost to render this visit useful, pleasurable, and successful in every way. Our guests will be entertained at dinner on Oct. 12th at the Hôtel Cecil and we have no doubt that a large number of English medical men will desire to be present to welcome and to honour them. Any further information can be obtained from Dr. Dawson Williams, 2, Agar-street, Strand, W.C., or Dr. W. Jobson Horne, 27, New Cavendish-street, W., the secretaries of the English Executive Committee.

"CELSUS REDIVIVUS."

ONE of our Italian correspondents writes: "Ciceronian in style, Hippocratean in method, the master work of Celsus once more appeals to his compatriots in the carefully constituted text and faithful rendering of Dr. Angiolo Del Lungo. Hitherto the 'Roman Hippocrates' has fared but indifferently at the hands of Italian translators. The Abbé Francesco Ranieri Chiari of Pisa, whose version saw the light at Venice in 1747, had slender qualifications for the work and seems, indeed, to have set himself the task of furnishing posterity with an object lesson in eighteenth century scholarship and style, the former characteristically loose, the latter characteristically affected. 90 years elapsed before another attempt in the same field was undertaken, this time with superior equipment in learning and literature, its author being Giuseppe Del Chiappa, a Tuscan by birth, and, like Chiari, an ecclesiastic by profession. Having qualified in medicine at the University of Pavia, in which he rose to be clinical lecturer, Del Chiappa acquitted himself of his task with some credit though leaving not a little to be desired in ease and elegance. His translation held the field for a quarter of a century till it was superseded by that of Salvatore di Renzi of Naples, whose monumental edition of Celsus is only less honourable to Italian medicine than his work on the 'Scuola Salernitana,' a mine of information on one of the most interesting episodes in medical history. Northern and Southern Italy having each tried its hand on reproducing the Roman classic it remained for Central Italy to bear away the palm in all the requisites of such an undertaking, and now we have in Del Lungo's text and translation as near an approach to the form and the charm of the original as life-long study and congenial gifts could make it. A Tuscan practitioner of many years' standing whose recreation after a laborious season was medical literature from Hippocrates downwards, Del Lungo left no resource untried for the elucidation and reproduction of his favourite author, the only part of his work which he was unable to perform being the revising of it in proof. This has been executed with adequate skill and pious care by his son Isidoro Del Lungo, who has had the competent aid of Professor Pietro Stromboli in a line-by-line comparison of the translation with the text and of Professor Enrico Rostagno of the Laurentian Library in a fresh collation of the Celsian manuscripts contained in that literary treasure-house. The result is before us in a compact and clearly printed octavo from the publishing firm of G. C. Sansoni of Florence, and its portability seems specially designed to render it—what it was to the translator—a companion equally pleasant and profitable on a professional man's holiday. A preliminary essay on 'Celsus and Roman Medicine' forms an illuminating introduction to the treatise itself, and from the finely moulded periods in the choicest Italian the reader is prepared for his encounter with an author possessed, *si quis alius*, of what the late Professr William Stokes of Dublin used to require in every votary of the healing art—the 'mens medica.' Here we are reminded of the substantial contributions made to therapeutic resource by the 'Roman Hippocrates,' who, according to Morgagni, was the first to recommend 'clisteri enutrienti' and whose suggestions for the relief of ascites have in Germany by Brunninghausen and in Italy by Pietro Betti been practised with the success that rewarded their originator. Here we find the history of 'anaplastic surgery,' how Celsus, who first makes mention of it, inspired the Sicilian operators, Branca, father and son, to revive it at the close of the fifteenth century till subsequent practice brought it to perfection through the Calabrian Vianeo to the great Bolognese surgeon, Tagliacozzi, called by his pupil Giambatista Cortesi, 'il legislatore ed il perfezionatore dell' arte plastica chirurgica.' And so through numerous resuscitations of 'wisdom old but new,' Del Lungo conducts us to the *quæstio vexata* of whether Celsus was a practitioner or consultant by profession, or merely the patrician amateur who acquired and practised the healing art much as the elder Cato did, in tending the slaves or *personnel* attached to his estate. Del Lungo's verdict is unreservedly for the former hypothesis, that Celsus was really a professional man, an illustrious member of the calling which the great Cæsar was the first to admit to the rights of Roman citizenship. But enough has been said to draw the reader's attention to what has been justly called 'the event of the year in Italian medico-historian literature'—an event which owes its significance not only to the transcendent merits of the classic as introduced, edited, and translated, but also to the filial care with which the posthumous work has been made accessible to the public by Signor Isidoro Del Lungo, himself an ornament of Italian literature, as witness *(inter alia)* his great edition of the mediæval Latin poet Pontanus."

HOSPITAL ABUSE.

THE question of hospital abuse has once again been brought prominently to the fore in the lay press. This is largely due to a correspondence which has recently taken place between the house committee of the London Hospital and the East-end Medical Association. The association maintained that the hospital authorities were treating as in- and out-patients individuals who had no just claim to take advantage of a charitable institution. The house committee expressed entire sympathy with the local practitioners and while realising that the matter was a difficult one to deal with drew up certain regulations with the view of checking any abuse. The principal clauses set forth in these proposed regulations are to the effect that the addresses of all patients will be taken and the books will be open to the inspection of any local practitioner. The local practitioners will also be invited to visit the out-patient department and if they recognise any patient known as being unsuitable for hospital treatment they will be able to communicate with the secretary. It is also announced that the committee is in communication with the Charity Organisation Society; it is hoped that this society will be able to advise the hospital as to the best means for inquiring about patients, while the hospital is willing to pay £100 per annum to the society for an almoner to be stationed in the receiving rooms. Finally, it is stated that the secretary has made arrangements to visit every patient admitted to the hospital on the day after arrival and if it is found that the patient is not of the class for which the institution is intended he or she is to be discharged and asked to give a donation for the time during which the patient remains in the hospital. The question of hospital abuse bristles with difficulties. Without expressing any definite opinion as to whether or not the proposals made by the house committee of the London Hospital are likely to aid in the solution of the

trouble we feel quite certain that they were framed with every good intention and with a sincere desire to prevent injury being done to the practitioners of the neighbourhood. Closely connected with the subject of hospital abuse is the proposal to admit patients into the hospitals on payment of small fees. We have received from a correspondent a copy of a motion passed at the annual meeting of the governors of the Dorset County Hospital. The resolution runs thus :—

> The committee shall have power to admit patients requiring surgical treatment who are able to pay the whole or part of the cost of such treatment, such cases to be admitted only on the recommendation of a medical practitioner and when there is ample accommodation and when, in the opinion of the committee, they require assistance.

Such cases will be admitted under the care of one of the honorary medical staff. Such a rule would seem to safeguard any attempt to abuse the charity and to supply aid to a class of patient who is really in need of it. There are many individuals who cannot conscientiously enter a charitable institution and yet cannot afford to pay the expenses which are entailed by a serious operation.

MEDICAL FEES AT INQUESTS.

AT a recent inquest at Edmonton the medical man who had attended the deceased had refused his certificate as to the cause of death on the ground that he had not attended during the two days preceding death and was summoned by the coroner as a witness. In the course of his evidence he was questioned by the coroner as to his treatment of the deceased and refused to answer the questions thus put on the ground that the treatment used was the business of the medical man and not of the coroner, whose only duty was to ascertain the cause of death, as to which the witness had stated his opinion. The coroner accordingly adjourned the inquiry and ordered another medical man to make a post-mortem examination. At the adjourned inquest the second medical man gave evidence assigning a different cause of death from that given by the first and the jury adopted his view in their verdict, adding a rider to the effect that the first medical man was deserving of censure for the manner in which he had given his evidence at the first inquiry. The coroner accordingly addressed the first medical witness, endorsing the view taken by the jury, and upon being applied to by him for his fee refused it. To this the witness replied by a threat of legal proceedings which the coroner told him he was welcome to take. Whether such legal proceedings have in fact been commenced we are not aware but if they are they will no doubt result in a statement of the coroner's powers in such matters. The section of the Coroners Act of 1887 dealing with the fees of medical witnesses does so in the following manner : "A legally qualified medical practitioner who has attended at a coroner's inquest in obedience to a summons of a coroner under this Act shall be entitled to receive such remuneration as follows—that is to say :—(*a*) For attending to give evidence at any inquest whereat no post-mortem examination has been made by such practitioner, one guinea. (*b*) For making a post-mortem examination of the body ..... and for attending to give evidence thereon, two guineas." The plaintiff in such a case as that described would presumably, therefore, have to establish either that the coroner was obliged to allow the fees of a medical witness who "attended" the inquest, whether he refused to answer reasonable and relevant questions or not, or that in the particular case under discussion the answers given or refused and the conduct of the witness generally were not such as to disentitle him from receiving his fees. In the second event, supposing it were decided upon the first point that the coroner might on proper occasions withhold the fees, the question would be discussed whether and to what extent any other court could review the coroner's exercise of his discretion. If the matter goes further it may prove of interest to coroners desirous of knowing the limitations placed upon their powers and to medical witnesses who are sometimes not well treated at inquests. It is to be observed that in criminal courts the fees of medical witnesses are in the discretion of the court as to their amount. The fee of not more than a guinea, or whatever the maximum sum may be in the circumstances, "may" be paid to the witness. At coroners' inquests the witness is "entitled to receive" a definitely prescribed remuneration if he is to receive anything at all. The latter is a more satisfactory arrangement for all parties, as the witness knows what he is going to get and, were it universal, magistrates and others would not be tempted to try to economise public funds at the expense of witnesses who have performed a public duty. The want of uniformity is a matter worthy of attention and remedy.

SUBPERIOSTEAL FRACTURES OF THE HUMERUS IN CHILDREN.

AMONG the fractures formerly overlooked which have been revealed by skiagraphy are "subperiosteal fractures" in children. This class of injury has been described by American surgeons but does not appear to have received much attention in this country. The ordinary green-stick fracture is, of course, subperiosteal but the "subperiosteal fracture" differs from it in that there is no deformity but a clean-cut crack or cross fracture without any bent or half-broken layer of bone. The intact periosteum prevents crepitus or mobility. This form of fracture appears to be common in children and must therefore often be overlooked. In the *Boston Medical and Surgical Journal* of August 11th Dr. J. S. Stone has reported five cases of subperiosteal fracture of the humerus which were observed in the Children's Hospital, Boston, between May 18th and Dec. 30th, 1903. In the first case, a girl, aged 11 years, fell from a swing, injuring the right arm. When she went to the hospital two days later she could not raise the arm from the side but the forearm was freely moved. No fracture was found. As she was very nervous the disability was thought to be hysterical and a sling was applied. Some atrophy of the deltoid followed. After a fortnight the arm could be raised somewhat and after six weeks movements were perfectly free. Three weeks later she was examined more thoroughly and an irregularity of the surgical neck of the humerus was found. There was slight forward projection of the upper end of the lower fragment. The amount of callus was small. A radiograph confirmed the diagnosis which, however, was made only in view of the two next cases. In the second case, a girl, aged 10½ years, was taken to the accident room. She had that day fallen down four or five steps, hurting the left arm. She could not raise the arm from the side. Careful examination revealed no fracture. Injury of the deltoid was diagnosed. On the following day she went to the out-patients' department. There were then marked swelling and ecchymosis in front of the neck of the humerus and slight thickening of the bone. The arm could be moved freely but it could not be abducted. Passive movement was free in all directions and caused little pain. A radiograph showed a transverse fracture of the surgical neck. The upper end of the lower fragment projected forwards and there was impaction of about a quarter of an inch posteriorly, causing slight forward curving. No attempt was made to correct the slight deformity and splints were applied. Considerable atrophy of the muscles of the shoulder followed in a few days. Perfect movement was regained. In the third case a girl, aged six and a half years, was taken to the hospital. Two and a half weeks before she fell from a fence. Afterwards, in spite of the fact that she had no pain, she could not raise the arm from the side. There were considerable atrophy of the deltoid and supraspinatus muscles, slight atrophy of the infraspinatus, and complete inability to abduct the arm. A slight bony projection was felt in the

surgical neck where a radiograph showed a transverse fracture. There was slight displacement forwards of the upper end of the lower fragment with slight impaction posteriorly and forward curve. A shoulder cap and sling were applied. The resulting callus was small and complete movement was regained. The remaining two cases are quite similar. The cases resemble one another so much that diagnosis of subperiosteal fracture of the neck of the humerus should be possible without the aid of the radiograph. The fractures occurred after the age at which greenstick fracture is most common, were produced by a fall on the outstretched arm, and were followed by inability to use the deltoid and to raise the arm from the side. Atrophy of the deltoid and muscles of the shoulder took place. There was a sharp, bony ridge on the anterior surface of the neck of the humerus which might easily be overlooked. Therefore, when a child cannot abduct the arm after a fall and presents none of the ordinary signs of fracture or dislocation, careful examination should be made to detect tenderness and thickening anteriorly below the head of the humerus. These signs should establish the diagnosis of fracture of the surgical neck and should deter the surgeon from further attempts to obtain crepitus by force. Of course it will be well to have a skiagraph taken, especially if there is any doubt.

THE TRIALS OF SMALL MOTOR-CARS.

THE recent trials of small motor-cars near Hereford cannot fail to interest many of our readers. Full accounts with the official results and awards are given in the numbers of the *Autocar* of Sept. 10th and 17th. The report of the judges shows the great improvement in small cars made during the last year. In 1903 there were only two or three makes of car under £200 in price which could be regarded as soundly built and trustworthy; to-day there are dozens. The cars in the Hereford trials were arranged in four classes according to price, varying from £150 to £200. They had to make 12 runs of about 50 miles each with the view of testing their power of making such runs without stop or breakdown. 35 competitors started and 26 completed the 620 miles. The report of the judges, which is minute and carefully drawn up, shows that the causes of breakdown were rarely vices inherent in motor-cars but due in most instances to slovenly workmanship in the fitting and connexion of water or petrol pipes, parts of the cooling system or of petrol service. The working parts of the cars are pronounced as very good but in many cases badly put together, these working parts, such as gear-cases, tanks, and steering-gear, being inefficiently placed on the frames. The frames themselves have very much improved and the tyre troubles were exceptional, as might be expected with lightweight cars. The observed errors of construction are all such as manufacturers can easily avoid and will avoid when their market extends. The cars varied in nominal horse power from six to ten and few carried more than two passengers. One engine only had two cylinders but to sell a two-cylindered car at this price two years ago would have been quite impossible. The tables drawn up by the judges contain comparisons of the competing cars in such important points as "ease of manipulation, brake tests, petrol consumption, comfort of passengers, hill-climbing, vibration, noises," for all of which awards were made according to a previously arranged scale of marks. For general excellence of design and construction medals were given and future purchasers of small cars would do well to consider the list. The De Dion-Bouton firm, which has always had a deserved reputation for small cars, is now finding keen competitors in Birmingham and Coventry, for the Wolseley, Siddeley, Swift, and Humber companies have all taken good places in the results. The performances of these little cars will unquestionably produce wide changes in the methods of locomotion of medical men all over the country, for the standard of work performed was exacting and the results were excellent.

"BOGUS BUTTER."

HOWEVER slack or apathetic our honest traders may be there seems to be no want of enterprise on the part of those whose aim is to swindle. On Sept. 14th at Heywood a young man with several aliases, all purporting to be Irish, was fined £40 and costs, with three months' imprisonment in default of payment, "for selling butter which was not of the nature, substance, and quality demanded." He had been previously convicted for a similar offence. Fraudulent dealing as to food deserves severe punishment. There were two cases and the fine was £20 and costs in each case. The first sample taken showed 11½ per cent. of water and 80 per cent. of fats other than butter and it was said to be "nothing less than margarine and not good margarine at that." We cannot suppose that those who sell margarine as butter would be very particular as to the source or wholesomeness of the fats which they use. The solicitor for the Lancashire county council alleged that the defendant was one of a gang of men who were engaged in a butter swindle in different parts of the country. They took shops in various towns and whenever a sample was taken at one of them there was a general "merry-go-round" of the men engaged in the business, so that it was extremely difficult to find who were the principals and really responsible. A handbill was issued at the Heywood shop and similar ones were posted in five other towns, so that some parts of Lancashire are well supplied no doubt with this "bogus butter." The poorer people who are the chief customers suffer heavily from high prices for inferior food. There was a sequel to this case on Sept. 19th, when at the Stalybridge police-court this same enterprising young man was again summoned for selling "bogus butter" on two occasions and fined £20 for each case. The analyst's certificate said in regard to each sample: "This is not a sample of butter; it contains 100 per cent. of margarine." It seems that when short of their "butter" at Heywood they sent to the shop at Stalybridge for it and *vice versâ*. If these fines of £80 occur frequently the profits of the fraud will be somewhat reduced and sufficiently so, let us hope, to make their perpetrator turn his attention to other fields of "industry."

THE STATUS THYMICUS.

THE few carefully examined cases of status thymicus that have been recorded in recent years have served to throw little light on this curious and grave constitutional condition the pathogenesis of which is still obscure. Persons affected with this diathesis are liable, under anæsthesia for example, to collapse and the danger of sudden death. An account of the symptoms and of the appearances, anatomical and pathological, of the status thymicus was given in an annotation in THE LANCET of March 24th, 1900, p. 869. The condition known as status thymicus is defined as a constitutional disorder characterised by persistence and hyperplasia of the thymus and lymphatic glands, frequently associated with arterial hypoplasia and the osseous evidences of rickets. In the *New York Medical Journal* of August 27th Dr. Frederick Simmons records a case of special interest in which a thorough post-mortem investigation was made. Such records are very rare and in this case status thymicus was suggested as the cause of death and the diagnosis was verified by the necropsy. The patient was a boy, aged ten years and seven weeks, who was under

Dr. Simmons's care suffering from muscular twitchings and "presenting a typically adenoid facies." Examination showed the presence of enlarged tonsils and naso-pharyngeal adenoids. The chest was flat and marked with costo-sternal nodules. The extremities of the long bones were somewhat enlarged but there were no other signs of rickets. The heart was normal to palpation and auscultation. A long and tight prepuce was discovered and at the operation decided on for removal of the naso-pharyngeal adenoids the patient was circumcised. He took chloroform well and the circumcision was rapidly performed. The head was then lowered and the adenoids were removed without further anæsthesia. At the last stroke of the curette the anæsthetist remarked a sudden failure of the pulse and immediate cyanosis of the face. Respiration suddenly came to a stop. Artificial respiration was at once applied by Silvester's method, stimulants were administered in the form of amyl nitrite and nitro-glycerine, strychnine, and electricity to the chest, while inhalations of oxygen were given. After working for three minutes respiration returned and continued for three or four inspirations and expirations, and then ceased. Artificial respiration was then resumed and continued for 45 minutes, while all the other means mentioned above to restore the heart and breathing were applied. The pulse, however, never returned, cardiac action remained imperceptible, and the attempt to revive the patient had to be abandoned finally as hopeless. The necropsy revealed an extreme venous engorgement with dark blood of all the organs, including the brain. A few adhesions between the dura mater and the cerebral hemispheres were present as well as a few scattered tubercles in the meninges. Upon opening the chest a large thymus gland deeply congested and measuring two by three inches was found. The lungs were normal. There was some frothy mucus in the bronchi. The heart was not enlarged. The right ventricle was perfectly flaccid, the left being firm and empty of blood had apparently stopped in systole. The myocardium and valves were normal. The bronchial and mesenteric lymph glands were enlarged everywhere (hyperplasia) and the spleen was very dark and congested, the case being clearly one of status thymicus.

LUNACY IN AUSTRALIA.

LUNACY administration in the colony of Victoria is at present to some extent in a state of transition owing to a new Lunacy Act which is now becoming effective. In the lunacy statistics for 1903, issued by the inspector of lunatic asylums, an outline of which was given by our Australian correspondent in THE LANCET of August 20th, p. 570, reference is made to the possibility of some modifications of the existing system being introduced. The powers contained in the new Lunacy Act of Victoria "will no doubt be used," says the report, "to provide at an early date some institutions, such as receiving houses, where the sanity of doubtful cases can be tested. It has been suggested that persons suffering from acute alcoholism should be received into these institutions. The wisdom of the policy of mixing such cases with the doubtfully insane is," adds the inspector of lunatic asylums, "open to serious question, and it must greatly increase the cost of buildings both in structure and upkeep." It is shown that the cost of maintenance of all institutions and patients during the year amounted to £135,795, the actual cost of maintenance of patients being £131,042, and the average weekly cost per patient 11*s.* 7*d.* Deducting the amounts received from the relatives of patients and from other sources the net cost of maintenance still remains as high as 10*s.* 4*d.* per patient. Economy has been practised wherever practicable and expenditure kept within the limits consistent with the well-being and comfort of patients. The introduction of receiving houses would add seriously to the burden of cost unless the cases admitted are restricted to actual and early cases of insanity only. The average recovery-rate for patients in all institutions during the year was calculated as being 7·4 per cent. of the average number resident, while the rate of mortality was 8·3 per cent. "The possibility of keeping our patients out in the open air all the year round," concludes the report, "makes tubercular disease far less dangerous than in England. As, however, there are severe cases in all our asylums I would again recommend," says the inspector of lunacy, "that special wards be erected at the Sunbury Asylum where they can be segregated." Special precautions have been taken at the Idiot Asylum, Kew, to prevent danger of overcrowding and contagion from tuberculosis.

"MACGREGOR FUND" IN AID OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE: CONGRATULATORY BANQUET TO SIR WILLIAM MACGREGOR.

Sir William MacGregor, M.D., K.C.M.G., C.B., late governor of Lagos, who has been recently appointed governor of Newfoundland, was entertained to dinner at the Palatine Club, Bold-street, Liverpool, on Sept. 16th by Sir Alfred Jones, K.C.M.G., the chairman of the Liverpool School of Tropical Medicine and president of the Liverpool Chamber of Commerce. In addition to the principal guest were the Lord Mayor (Sir Robert Hampson), Sir Ralph Moor, K.C.M.G., Professor Rubert Boyce, F.R.S., and others. Sir Alfred Jones, in proposing the toast of the health of Sir William MacGregor, described him as the best governor whom West Africa ever had. They were very sorry to lose him and he congratulated Newfoundland upon having acquired him. One thing he could never forget and that was the way in which Sir William MacGregor had helped the Liverpool School of Tropical Medicine to make the tropics healthier than they were; in fact, none could dispute that Sir William MacGregor was the father of that school. Sir William MacGregor, who was warmly received on rising to respond to the toast, said that in going to Newfoundland he was not going away from the influence of Liverpool. As long as he had known them the merchants of Liverpool had always recognised that the possession of money brought along with it a certain responsibility. There were among them a strong vein of unselfishness and a recognition of native rights, as exemplified by their assistance to the Lagos Institute and the splendid work of the Liverpool School of Tropical Medicine, of which Sir Alfred Jones was the founder. The latter work, he assured them, was having a great influence not only on the traders but also on the native races, and they would find that in proportion as they increased the sanitary condition of West Africa they would increase their own trade. He trusted that before long the school would be put on a national basis and would be able to extend its work into the enormously extensive sphere only the fringe of which had as yet been touched. The toast of "The Liverpool School of Tropical Medicine" was responded to by Professor Boyce who said that Sir William MacGregor was one of the first to take to heart the lessons enunciated by Major R. Ross in regard to the health of West Africa. Many young men without prospects were working in the direction of promoting health in West Africa and one of them, a Canadian, while engaged in that work was paying another man to make investigations in other directions. Sir Alfred Jones said that he was desirous of raising a fund, to be called the "MacGregor Fund," in aid of the School of Tropical Medicine, to which he would subscribe £500. He was

followed by Mr. John Holt (vice-chairman of the African Trade Section of the Chamber of Commerce) who said he would contribute £200 and by Mr. H. Cotterell who promised £50. Mr. Miller said that his firm would also subscribe.

THE MUNICIPALISATION OF MEDICAL SERVICE.

WE shall watch with interest a new experiment in contract practice which is on its trial on a large scale in the city of Zürich. In this socialistic centre the medical profession are, as it were, "pooling" their practices. There is a communisation of their services and each inhabitant is to pay a yearly contribution of 3*s.* 7½*d.* The income from this source, which approximately amounts to £20,000, is divided in equal shares among the 40 medical men who constitute the "pool." A simple calculation shows that the income of each will be £500 per annum. Although there are many theoretical advantages in annual contracts between medical advisers and their patients, more especially when the former take upon themselves the duty of keeping their patients in health as well as of attending to them when they are actually ill, nevertheless there are practical disadvantages which for the present, at all events, would be calculated to interfere with the success of any such plan if extended to the better class practices of this country. We are not yet in possession of the working details of the scheme on trial in Zürich. We presume that some such method is in operation as that adopted by provident dispensaries and clubs in this country—that is to say, that a certain definite group of patients is allocated to each medical man, and that only within limits are the former permitted to choose their own medical adviser. If the citizens of Zürich are permitted to exercise their own discretion as to the medical man whom they are to consult it is obvious that the most popular practitioners will be seriously overworked. On the other hand, if the patients are compelled to intrust the care of their health to the hands of a man in whom they have no confidence there will be ample room for discontent.

PERITONITIS DUE TO THE PNEUMOCOCCUS.

RECENT bacteriological researches have proved that the pneumococcus may produce pathological changes in many parts of the body other than the lungs; thus cases of peritonitis, of suppurative or phlegmonous gastritis, and of appendicitis occur from time to time in which the pneumococcus can be demonstrated as the cause. Dr. M. von Brunn discusses the general features of pneumococcus peritonitis in *Beiträge zur Klinischen Chirurgie*, Band xxxix., Heft 1, and summarises his results as follows. The condition is relatively a rare one; it occurs more often in children than in adults and more in girls than in boys. It may be primary in the peritoneum or may be secondary to affections of the lung or middle ear due to the pneumococcus. Considered from the clinical standpoint the chief features of the affection are in typical cases an onset like that of an acute peritonitis, passing afterwards into a chronic stage with relatively few peritoneal symptoms. Pathologically, the appearances produced are suggestive, though, of course, the diagnosis can only be made after bacteriological examination. The process leads at an early stage to adhesions and to localisation of the exudate, which is very coagulable and rich in fibrin, of greenish-yellow colour, and not offensive. The prognosis is favourable; spontaneous recovery though possible is rare. The treatment consists in freely opening the abscess cavity and draining, recovery being the rule. There are perhaps few organisms producing such widely different affections as the pneumococcus and it would be a matter of great interest and value if the mode of entry to some of the organs primarily affected could be more definitely determined, for in the primary peritoneal cases Dr. von Brunn admits that the explanation of their origin is far from satisfactory. It has been suggested that infection occurs in some cases through the appendix but this would certainly not account for all. The pneumococcus seems to have a predilection for serous membranes as well as for the lung, since pleurisy, pericarditis, peritonitis, and meningitis due to it are all described, and in all the cases the exudate presents similar characters to those described by Dr. von Brunn in peritonitis.

RUSSIAN PRECAUTIONS AGAINST CHOLERA.

THE chief medical inspector has returned from a six weeks' tour in the country bordering on the Persian confines where he concerted measures for preventing the importation of cholera from Persia. He asserts that the most comprehensive arrangements have been made particularly to keep the workmen's quarters of the towns clean and the workpeople well supplied with good water, food, and healthy houses. Orders have been issued for instant isolation in case of suspected illness and the disinfection of all things connected with the sick. At the ports on the Caspian Sea observation stations have been established, with special steamers attached to the health service, and a complete series of hygienic stations have been provided for the whole length of the river Volga, the great water highway leading from the Caspian Sea through a great part of Russia. Particularly Astrakhan and Baku have to undergo a thorough cleaning. In the latter town incredible filth had been found in the workmen's quarters. There unhealthy houses are to be closed until they are put into a sanitary condition and temporary barracks meanwhile are to be provided. The medical staff and sanitary officers have been largely increased, hospital accommodation has been selected, and abundant supplies of disinfectants and medicines are being laid in. "Unfortunately," says the notice in the *Novoe Vremya*, "our towns are in such an insanitary state that it will require tens of millions of roubles and years of time to answer to the medical requirements." The Transcaucasian territory is the real danger zone. Temporary hospitals have been installed there and the medical staff has been reinforced, including drafts from the Red Cross Society. Chief Inspector Anrep does not anticipate an invasion of cholera this year but profiting by experience gained from past epidemics he entertains grave fears for next spring and summer. Further details as to cholera in the Near East will be found in the communication from the British delegate to the Ottoman Board of Health which appears in another column.

THE death on Sept. 16th is announced of Mr. Charles W. Izod, M.R.C.S. Eng., L.S.A., of Esher, Surrey, which took place at Whitehall Court, Westminster. We gave a concise account of this gentleman's notable record in THE LANCET of May 17th, 1902, p. 1434. Mr. Izod had been surgeon at Claremont, near Esher, to the household of Leopold I., King of the Belgians, to that of the late Queen Victoria, to that of the King of the French, Louis Philippe and his family, and to that of the Duchess of Albany. He retired in June, 1902, after 55 years' practice.

THE winter session of the West London Post-graduate College, West London Hospital, Hammersmith-road, W., will commence on Thursday, Oct. 13th. The opening address will be delivered by the Right Rev. the Lord Bishop of Oxford at 5 P.M. on that date and medical men desirous of attending can obtain a ticket on applying to Mr. L. A. Bidwell.

Dr. J. Lorrain Smith, the newly appointed professor of pathology, will open the medical session of the University

of Manchester by delivering an introductory address on Monday, Oct. 3rd, at 4.30 P.M., to which members of the profession residing in or near Manchester are invited.

THE address at the opening of the Medical Faculty of the University of Birmingham will be delivered by Dr. P. H. Pye-Smith on Oct. 3rd.

THE EVOLUTION OF MAN'S DIET.

By HARRY CAMPBELL, M.D., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE HOSPITAL FOR NERVOUS DISEASES, WELBECK-STREET.

III.[1]

THE RELATIVE QUANTITIES OF ANIMAL AND VEGETABLE FOOD CONSUMED DURING THE SUCCESSIVE DIET EPOCHS.

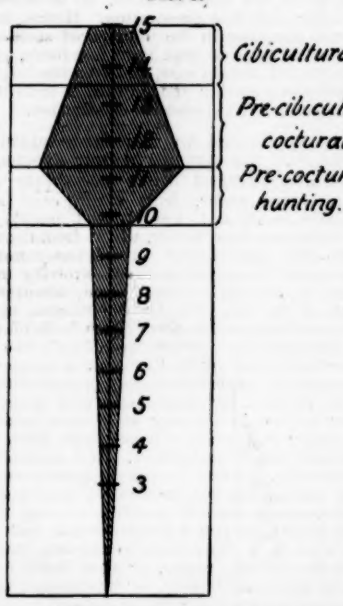
WE may now fittingly consider the fluctuations in the relative quantities of animal and vegetable food which have occurred in the diet of evolving man at various stages. As our anthropoid and homo-simian precursors grew in intelligence they were naturally able to secure more and more of the much-coveted animal food, such as insects, grubs, reptiles, eggs, birds, and the smaller game, and there took place in consequence a steady rise in carnivorism during the anthropoid and homo-simian stages but especially during the latter. Nevertheless, we may regard it as certain that until the hunting and fishing period was reached our ancestors remained essentially vegetarian. With the advent of this period, however, they greatly increased in carnivorism and ere long became actually more carnivorous than vegetarian. I say more carnivorous than vegetarian because even during the next diet period, when by means of cookery man had greatly increased his supplies of easily digestible vegetable food, he still continued to depend very largely upon animal food as is proved by the dietetic customs of existing pre-cibiculturists. It is true that many of these peoples inhabit barren regions affording a comparatively meagre supply of vegetable food but it may safely be asserted that not the most luxuriant and bountiful region in the world is capable of supporting by means of its uncultivated flora alone any existing pre-cibicultural people even with the great help to be got from their elaborate systems of preparing vegetable food. How much less capable, therefore, must even the most fertile regions have been in pre-coctural ages. Now, though it is certain that animal food was included in the dietary of our anthropoid precursors there can be no doubt that they were not so incapable as man is of subsisting wholly on natural vegetable products; and from this we may infer that the evolving man during the homo-simian and early hunting periods lost much of his power to digest raw, uncultivated vegetable substances.

Just as the discovery of cookery led to an increase in the quantity of vegetable food consumed so also did the introduction of agriculture, and in an even greater degree, for while the breeding of animals augmented the available quantity of animal food it did not augment it to anything like the same extent that agriculture augmented that of the vegetable food. Certain communities, or sections of communities, do indeed at the present time subsist mainly on animal food, but taking agricultural communities at large they are certainly in the main vegetarian, and some, like the Hindus, almost entirely so.

To sum up: our ancestors, though remaining chiefly vegetarian, slowly increased in carnivorism during the anthropoid and homo-simian stages, became chiefly carnivorous during the early hunting period, half carnivorous and half vegetarian during the pre-cibicultural coctural period, and thenceforward increasingly vegetarian again until the period of stationary agriculture was reached.

As to the truth of these generalisations there can, I think, be no doubt. That man and his precursors have for hundreds of thousands of years been largely carnivorous, that the incipient man actually subsisted more upon animal than vegetable food, that, in fact, after evolving from his homo-simian precursors man has mounted up all but the last one or two rungs of his evolutionary ladder on a highly animalised diet is as certain as anything well can be. This cardinal fact must ever be borne in mind by those who seek to devise a rational system of diet for modern man. To assume that disease and premature death necessarily result from taking animal food and that in matters dietetic physiological salvation is to be found in vegetarianism alone is to ignore the fact that for an extremely long period (10th to 11·5th grade) of man's phylogeny he was actually more carnivorous than vegetarian. I am not forgetting that man was most carnivorous when in the hunting stage—when, namely, he was leading a highly active out-door life; that during the agricultural period his organism became, and is still becoming, more and more adapted to a cooked vegetable diet; that a large quantity of animal food often proves injurious to the modern man when leading a sedentary life; and that even the carnivorous dog when compelled to spend most of its life lolling about a house or chained up in a back yard is unable to tolerate a purely animal diet. All this is very true, but because a mainly animal diet is apt to be injurious to those leading sedentary lives we must not on that account and in the face of his past history assume that the only diet suitable for man is the purely vegetable.

FIG. 5.



ALTERATION IN THE NATURE OF THE VEGETABLE FOOD CONSUMED DURING THE SUCCESSIVE DIET EPOCHS.

Before the introduction of cookery all vegetable substances save the luscious fruits needed considerable mastication in order to break up their cellulose framework, and the denser and more abundant this framework the more mastication did they stand in need of. Naturally, therefore, owing to that innate desire to economise labour which characterises all sentient beings, the denser and more bulky vegetable substances would be less in demand than the less dense and more concentrated, and similarly, insipid, bitter, or acrid foods would find less favour than more palatable kinds. Consequently, as the evolving man became during the homo-simian and hunting periods, but especially the latter, less and less dependent upon vegetable food there was a progressive abandonment of the most dense, bulky, and unpalatable kinds in favour of their opposites, and thus it was that by the beginning of the coctural period man had by discarding lost the power of digesting in the raw state many of the coarser and more unpalatable varieties on which his anthropoid ancestors subsisted and on which, presumably, existing anthropoids still to a large extent subsist.

With the advent of cookery and the extra quantity of

[1] Nos. I. and II. were published in THE LANCET of Sept. 10th (p. 781) and 17th (p. 848), 1904, respectively.

easily digestible vegetable food which it rendered available man became still less dependent upon that which was raw and uncultivated and this led to a further abandonment of, and loss of power to digest, the least choice varieties. Finally, agriculture has rendered man wholly independent of raw, uncultivated vegetable food by placing at his disposal an abundance of pleasant, easily digestible and highly nutritious vegetable foods, which are consumed either in the raw state, as in the case of fruits, or, as more generally happens, after elaborate preparation. Hence, he has lost the power of digesting in the unprepared state all but the very choicest varieties of wild vegetable foods, such as the luscious fruits and certain nuts, and even the latter he often finds difficulty in digesting, though this, it must be acknowledged, is usually due to defective mastication.

ALTERATION IN REGARD TO THE SACCHARIDES INGESTED DURING THE SUCCESSIVE DIET EPOCHS.

Before the agricultural period the supply of soluble saccharides—grape sugar, fruit sugar, cane sugar—was comparatively small and was derived mainly from the luscious fruits and from honey, which from the anthropoid right into the agricultural epoch has constituted an important source of saccharide for the evolving man. With the advent of the agricultural period, however, and the cultivation of the date, the fig, the banana, and in later times the sugar cane and beetroot (from both of which cane sugar is extracted in enormous quantities), the supply of soluble saccharide has reached astounding proportions.

The quantity of starch consumed increased with the introduction of cookery, by means of which many vegetable substances useless in the raw state were converted into valuable foods; and it was, of course, still further increased by the introduction of agriculture. And not only was more starch now taken, but this increased quantity was subjected to far less mastication and insalivation than in pre-coctural times and consequently the quantity entering the stomach in a crude state underwent a great increase, and in this age of pap, when it is the custom to consume starch for the most part in the soft, pappy, or even liquid form, it has gone up by leaps and bounds, a circumstance which I hold to be responsible for a great deal of disease.

INFLUENCE ON FUNCTION OF THE CHANGES IN THE DIET OF THE EVOLVING MAN.

The ability to digest animal food rose and fell with the quantity consumed during the various diet epochs and was thus greatest during the early hunting stage, while the ability to digest raw vegetable foods, especially of the coarser kinds, has steadily diminished from the anthropoid stage until the present time. One can scarcely doubt that our anthropoid ancestors had special powers of coping with cellulose and, one may add, with the bitter and acrid constituents of many vegetable foods; it would be interesting to make observations on existing anthropoids in regard to this point. It is known that some of the vegetable foods of the great apes are bitter, and that sour foods are not distasteful to some at least of them is shown by the fact that they sometimes display a great liking for them. Seeing that not even the herbivora secrete juices capable of digesting cellulose, but depend upon bacterial action for its digestion, one would not expect the anthropoids to secrete a ferment capable of dissolving it but there can be little doubt that they possess special facilities for dealing with this substance.

Up to the discovery of cookery mouth-digestion was more active than it has since been, owing to the prolonged trituration to which it was necessary to subject the raw vegetable foods. One may presume, therefore, that the amylolytic power of the salivary glands was greater in pre-coctural times than it has since become, especially in these days of pap, when the starchy foods slip down into the stomach with a facility which can only be characterised as disastrous.

Inasmuch as up to the coctural period most of the saccharides were swallowed in the soluble form—e.g., grape sugar, fruit sugar, cane sugar, maltose, and the dextrines—we may assume that up to this time the stomach and intestines were intolerant of large quantities of starch, but that after the introduction of cookery their ability to cope with this substance steadily increased, becoming ultimately greatest in those communities which, like the Hindus, are essentially vegetarian. In like manner the power of digesting cane sugar must have been increasing within quite recent times in correspondence with the large quantities now consumed.

The functional adaptations just referred to have been not only individual but racial, the latter having been achieved by natural selection—i.e., by the survival of those best able to adapt themselves to the dietetic changes. We see this racial adaptation going on under our very eyes. Tens of thousands of starch-deluged and bottle-fed children are in our own country yearly weeded out, those best adapted to these modes of feeding surviving and transmitting their digestive peculiarities to their offspring. Thus a race is evolving which is capable of being reared on cow's milk during infancy and of digesting enormous quantities of starch and sugar.

INFLUENCE ON STRUCTURE OF THE CHANGES IN THE DIET OF THE EVOLVING MAN.

These various phylogenic changes in digestive function have had, it is needless to say, a structural basis, though the gross structural changes which have taken place in man's digestive system during his gradual ascent are less pronounced than one might perhaps expect. We have, of course, no exact anatomical knowledge of the digestive organs of our anthropoid precursors, but we know that they must have been very like those of existing anthropoids; and by striking their anatomical mean in these animals we shall get a fairly accurate notion of them as they existed in the homo-simian. At present it is not possible to determine this mean, for, unfortunately, the necessary facts are not forthcoming. One thing, however, is certain—viz., that there is a remarkable general resemblance between the digestive organs of man and of the anthropoids—a fact which renders it practically certain that they have undergone little gross structural change since anthropoid times. It is to be hoped that the comparative anatomy of the digestive system in the great apes will soon be worked out in minute detail, so that we may be in a position to say what changes have taken place in it, as this would give a clue as to the dietetic changes which must have, *pari passu*, occurred. A few known anatomical peculiarities in the digestive organs of the anthropoids may here be referred to. The dental formula of the anthropoids is the same as for man, though the teeth of the former are larger and stronger than those of the latter, being evidently adapted for coarser and more vigorous work. The tongue of the anthropoids is said to be small, which is somewhat surprising. The lingual papillæ in the aged gorilla acquire a horny hardness and the circumvallate papillæ of this ape are arranged -shaped, as in man; in the chimpanzee they form a T or a +. Owen and Virchow state that the small intestines are devoid of valvulæ conniventes in all the apes, but it would appear that they do actually exist, though in a rudimentary form, in some; in any case, however, they are certainly not so developed as in man, and this constitutes one of the most striking anatomical differences in the digestive systems of man and the great apes. In all the great apes the cæcum is provided with a vermiform appendix; in the orang this structure is long and convoluted; in the chimpanzee it is constricted at its origin. In none of the great apes is the cæcum provided, as in the case of the monkey, with a mesentery. The liver of the orang bears a remarkable resemblance to that of man (Virchow). The gall-bladder of the chimpanzee is considerably larger than in man. Professor Keith in a letter to me lays stress upon the great similarity between the digestive organs of the anthropoids and of man, the main differences according to him being the greater muscularity of the stomach and the less complete development of the valvulæ conniventes in the former case. Not only do we lack a minute knowledge of the anatomy of the digestive system in the great apes, but we are not even able to state precisely how far existing pre-cibicultural peoples differ in regard to their digestive organs from us moderns. Information on this point is much needed. It does not seem likely that any marked change has taken place in the digestive system since the negro, Mongol, and Caucasian diverged from their common ancestor, inasmuch as, though there may be differences in detail, it is practically the same in all of them; and this suggests that the chief differences between man and his anthropoid precursor in respect of the digestive system were brought about before the specialisation of the three great families—i.e., in the simian period, prior to the evolution of the tenth grade; and if such is the case we may conclude that the food of the evolving man underwent very decided changes during that period.

Probably the most obtrusive change which has taken place in the alimentary system since the anthropoid period is to be found in the maxillary apparatus, but this is not wholly, if indeed mainly, connected with diet. It should be noted that primeval man, even as late as the latter part of the pre-coctural period, was obliged to use his jaws in eating almost, if not quite, as *vigorously* as did his anthropoid ancestor, though not actually as *much*, perhaps, on account of the steady diminution in the quantity and density of vegetable food consumed during this period. But against this has to be set the increase in the quantity of animal food consumed, which must have led to a corresponding increase in what may be called the carnivorous use of the jaws, in which the masticatory muscles are made to contract with greater force, though for a shorter time, than is required by raw vegetable food.

Now, there can be no doubt that long before the discovery of cookery the jaws had largely lost their bestial character and had assumed an essentially human aspect, and it is obvious from what has just been said that the profound change which they underwent in the pre-coctural period cannot be explained by reference to dietetic changes. It was probably in part brought about in correlation with the progressive expansion of the cranial cavity which has marked man's ascent from the anthropoid, but it was also largely due to the fact that as the evolving man came, in his encounters with other animals, to rely more upon his intelligence and less upon mere brute force he stood correspondingly less in need of massive prognathic jaws which constitute for a large number of animals the most deadly weapon of encounter. Directly man began to fashion weapons we may assume that he practically ceased to use his jaws as a means of offence and defence, and that thereafter the progress from prognathism to orthognathism was more rapid than during any previous period. The changes in the maxillary apparatus which have taken place in civilised times have been connected partly with the increasing softness of the vegetable food, and have, perhaps, partly also been brought about by sexual selection, highly animal jaws being, in the woman at least, a bar to marriage.

Influence on Mental and Social Evolution of the Changes in Man's Diet.

We see from what has been already said what an important part food has played in influencing man's habits and social evolution—how the invention of weapons and other artifices for securing game changed the evolving man from a comparatively stationary being to a wandering hunter; how, again, when he learnt to cook he became less dependent than heretofore upon the hunt for his daily food; and how, finally, with the advent of food-culture, hunting became less and less a necessity, until, when the late agricultural period was reached, it died right out (except as a pastime), a sufficiency of food being artificially produced by a small section of the community, leaving the remaining portion free to specialise in other directions, and so rendering the evolution of a complex social organisation for the first time possible.

We may here consider in some further detail the influence on man's mental and social evolution of the changes which his diet has undergone during each of the successive diet epochs. Directly the hunting stage was reached and primeval man exchanged his comparatively stationary life for a wandering one a great change came over his habits of life, a change which cannot have failed to exercise a profound influence on his evolution. Among all existing primitive peoples the hunting is undertaken by the men and we may be sure that this was the case from the very beginning of the hunting period. Hence it seems probable that with this period there began the first real division of labour other than that entailed by maternal functions. With this exception we may assume that before the hunting period the two sexes led much the same kind of life and took much the same share in the food-quest—in searching for fruits, seeds, roots, insects, grubs, eggs, and the like—though, as we shall see later, even at that early period the task of collecting the vegetable food may have been chiefly undertaken by the female section of the community, but when the men began to devote themselves to the hunt the duty of gathering the vegetable food fell more and more to the lot of the women, each sex possibly playing an equal part in securing food from among the smaller species of animals.

Man remained a hunter right through the early coctural period and well on into the agricultural, from, let us say, the tenth to the fourteenth stage, while, in fact, he was putting on 400 cubic centimetres of brain tissue, and one can hardly doubt that this circumstance profoundly influenced his mental evolution and played no small part in causing the mental differences between the two sexes—e.g., the greater development in the man of nervous activity, love of adventure, courage, bellicosity, ingenuity, and intellectuality generally. With the advent of the hunting period mental evolution received, in fact, a great impetus, but all in favour of the development of the male. His observant faculties, inventive powers, and cunning were called into play as they had never been before. He was led carefully to observe the habits of animals, to devise means of deceiving them, to invent traps for ensnaring and weapons for destroying them; while his courage, his willingness to encounter danger and his acumen in avoiding it, were continually being tested; and we may be quite sure that those hunters who showed the greatest aptitude in these regards stood the greatest chance of survival, were most likely to secure the largest bags, to be recognised as leaders, and to leave the most numerous offspring to inherit their excellences; and seeing that natural variations appearing in one sex are on the whole more apt to be transmitted to the same than to the opposite sex—seeing, too, that the human male remained for some hundreds of thousands of years essentially a hunter—there has been ample opportunity for these several qualities to become accentuated in the male sex.

We may further trace a relationship between the diet epochs and man's fighting propensity. In the pre-coctural hunting period the family constituted the social unit. It was only possible to hunt in small numbers, large numbers scaring the game away. There was thus little opportunity for combinations among families and inasmuch as most of the man's time was occupied in the food-quest none but very desultory and spasmodic fighting was possible. It is unlikely that food was to any extent stored at this time and it is obvious that systematic warfare cannot be waged on an empty stomach. But when the discovery of cooking and the practice of storing vegetable food released the hunter somewhat from his occupations tribal organisation and warfare became more common, especially in seasons of plenty, though it was not until the early cibicultural period was reached that organised warfare received its chief development. The increase in the supply of food which marked this epoch rendered tribal organisation possible and man's fighting instinct, now at its acme, was allowed full play. This instinct, for such it is, was not at first anti-social except in so far as it was connected with the sexual impulse which impels all polygamous males to fight for the possession of the females. It presumably took its origin in the need which man, in common with all animals, had for self-protection, and while doubtless strengthened by the development of sexual combativeness it probably became still further accentuated during the hunting period, when man took on the aggressiveness of the carnivorous animal. All the carnivora are fierce fighters, and though man, aided as he was by his weapons and his cunning, did not develop quite the same fierce and terrific aggressiveness that belongs to the pure carnivora, yet there can be little doubt that his fighting propensities were greatly intensified during the hunting stage. He made ruthless war upon every species of lower animal that crossed his path. His instinct to kill now developed in its most acute form. When, therefore, with the increase of vegetable diet which came with the early coctural period and still more with the period of food culture he had leisure to turn aside from his onslaught on the lower animals it is scarcely surprising that his combative impulse should find vent in warring upon his own kind. Moreover, the beginnings of possessions of value now frequently provided a *casus belli*. The early agricultural stage is probably the most horrible period of human bloodthirstiness, when man, unsoftened by the moral sense which slowly evolved with the slowly evolving social organisation, reached the very acme of his blood lust and insatiable desire for inflicting torture. Now it was that fighting was resorted to, not merely as a means for some tangible and rational end, such as women, slaves, or hunting-grounds, but for the mere love of it and in order to secure scalps, heads, or other terrible trophies of war. I do not believe that this form of savage and devilish warfare was practised to any great extent before the cibicultural period. At the present

day it is certainly not met with so much among the precibiculturists as among the early agriculturists, such as the natives of Africa, Borneo, and New Guinea.

(To be continued.)

THE FACULTY OF MEDICINE OF THE UNIVERSITY OF LONDON.

THE commencement of the winter session will witness the renewal of activity in all departments of medical education. Towards the end of October the Faculty of Medicine of the University of London will be called together by the authority of the vice-chancellor in order to elect a dean for the succeeding two years. It will come as a surprise to many and will be regretted by all that this meeting will mark the termination of the period of office of Mr. H. T. Butlin as first dean of the Faculty of Medicine of the University of London. By the statutes a dean of a faculty is elected for two years and is re-eligible for a second period of office only. Mr. Butlin having now rendered excellent service to the University for a period of four years the faculty is unable to ask him any longer to continue in office. The enthusiasm which Mr. Butlin has shown in furthering the development of the University on its new lines makes it certain that whether in office or not he will continue to render it service. It is much to be hoped, however, that Mr. Butlin may in the near future have further opportunities of actively and officially promoting the welfare of the University as a member of the Senate. Considerable responsibility rests upon the faculty in choosing its second dean. As time goes on there can be little doubt that the office of dean of the Faculty of Medicine of the University of London will become the most prominent position in the country in connexion with medical education. The presidencies of the various Royal Colleges will continue to be the highest posts of honour to which a medical man can be raised by the votes of his professional colleagues, the blue ribbons conferred upon the most eminent practitioners of medicine and surgery by those whose appreciation is a man's best reward. But if we rightly read the signs of the times the professional colleges will gradually yield to the universities the premier place as educational institutions. Admirable as has been the educational work of these colleges in the past and regretfully as we must see any curtailment of their activities, we cannot shut our eyes to the fact that their future destiny is to watch over the interests and to maintain the highest traditions of our profession rather than to secure the adequate education of those about to enter it. This separation of the professional and educational interests of the medical community, securing as it will the undivided energy of powerful organisations for the promotion of each interest, is likely to have a very beneficial result. It is well that the development of medical education should proceed on the broadest lines of educational progress and that those responsible for its direction should be in close touch with professors of every branch of knowledge. The scheme for a one faculty university has disappeared for ever and in the interest of medicine it is much to be hoped that before long the unequal preponderance of the medical faculty in London may be balanced by the proportionate development of each of the faculties which constitute the university. From its well-organised sister faculties the Faculty of Medicine will have much to learn and its capacity to learn and to take advantage of its acquired experience will in great measure depend upon the judgment with which it chooses its official head. Mr. Butlin has set all future deans an example which it will be difficult to surpass and the faculty should endeavour to secure as his successor one who will carry on the work in the able manner in which it has been inaugurated. Amongst the 350 members comprising the faculty the large number of suitable candidates is the only feature which should make the choice a difficult one. For the new dean and the faculty over which he will preside there is no lack of work if education in the great schools of medicine in London is to derive full profit from the reconstitution of the University. For the time being the scheme of concentration of early and preliminary medical studies has passed out of the hands of the faculty. The Senate has adopted the unanimous proposals of the faculty and an appeal committee is engaged in securing funds to start a university centre of preliminary medical education at South Kensington in accordance with these proposals. Meanwhile individual members of the faculty can give valuable assistance by bringing the appeal to the notice of influential friends and public bodies able to give financial help. So soon as the necessary funds are available the faculty will, no doubt, be invited to fill in the details of the scheme, the main outlines of which it has already submitted to the Senate for the organisation of the Institute of Medical Sciences.

While the scheme for the concentration of early medical studies outside the hospitals is satisfactorily initiated there is much to be done towards coördinating clinical study within their walls. The faculty is the common meeting ground of the clinical teachers from all the schools of medicine, and not the least important function that it is destined to achieve is to break down the barriers between the schools which have grown up as the result of many years of isolated work and mutual competition. In friendly discussion of proposals to strengthen their common university the partisans of different medical schools will learn that progress can be achieved more certainly by coöperation and the mutual sharing of burdens than by the competitive struggle for existence which has hitherto been the chief characteristic of the relationship of these vigorous institutions.

The faculty may well consider whether the unrivalled field for clinical study offered by the hosts of patients in public institutions in London is fully made use of for the training and information of students, for the continued instruction of qualified medical men, or for the advancement of the general sum of medical knowledge. We venture to assert that in every one of these directions the opportunities are very far from being fully utilised. The Faculty of Medicine provides the centre whence concerted action can be brought to secure the much-needed reforms in dealing with the great mass of clinical material which is at present wasted. A suggestion has been made that as a first step towards coöperation and as a visible bond of union between the schools of the University some of the best original work issuing from the wards and laboratories should be collected and published periodically as the Transactions of the Faculty of Medicine of the University of London. To such an enterprise we should offer a most hearty welcome. Although there are some estimable associations in London for enabling general practitioners to refresh their memories and to keep themselves abreast of modern devolopments of clinical methods, we feel that we shall not be accused of failing to appreciate their efforts if we assert that the higher class of post-graduate study is still awaiting the action of the University to establish it on a satisfactory basis. Amongst the teachers of the faculty it is to be hoped that a considerable majority is impressed by the degradation of true mental training that is resulting in England from the dominance of the examination system in medicine as in all other branches of study. The reconstitution of the University is largely the result of a revolt against examinational tyranny and it ought not to be impossible for the teachers to evolve a scheme whereby the work a student does in the laboratories and wards of a hospital shall have its due weight in determining his success at examinations. The junior teachers of the schools, who see so much of the evils of cramming for examinations, should remember that through the Faculty of Medicine their voices can be heard in the counsels of the University. Any scheme which they can persuade the faculty to approve will receive the sympathetic consideration of the Senate. The faculty as a deliberative and consultative body is essentially the meeting before which advanced views on all questions of medical education should be brought. Progress is only possible by the formation of a strong public opinion as to existing defects and possible remedies. It is much to be hoped that during the ensuing session the faculty may take its part in persuading the medical teachers in London that much remains to be done to insure that its University shall maintain its position as the greatest centre of medical education.

MORTUARY FOR STONEHOUSE (DEVON).—At the meeting of the Stonehouse urban district council, held on Sept. 13th, it was decided to erect a new mortuary, the old one being described by one of the members as a disgrace to the town.

CHOLERA IN MESOPOTAMIA, PERSIA, AND ARABIA.

(FROM THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.)

ABSENCE from Constantinople has prevented me from continuing the story of the cholera outbreak in Asiatic Turkey and Persia. My last letter, which appeared in THE LANCET of July 16th, p. 176, brought the record down to the end of the first week in July. The most serious extension of the disease since then has been on the Persian side of the frontier, in Tehran and its neighbourhood. It has, moreover, spread to Meshed, Resht, and Astrabad and a single suspicious case—fortunately not followed by others—occurred early in August at Baku, on the Russian shores of the Caspian. The rumours that the disease had appeared in St. Petersburg and elsewhere in Russia are officially declared to be unfounded.

In Turkish territory the following has been the course of the outbreak in the last few weeks. At Basra the epidemic has, it is hoped, come to an end; the figures here in the last seven weeks of the outbreak were as follows:—

On July 6th	...	...	...	...	...	...	2	cases	...	2 deaths.
From July	7th	to	July	15th	...	2	,,	...	2	,,
,, ,,	16th	,,	,,	23rd	...	10	,,	...	5	,,
,, ,,	24th	,,	,,	30th	...	8	,,	...	4	,,
,, August	3rd	,,	August	4th	...	2	,,	...	2	,,
,, ,,	5th	,,	,,	12th	...	5	,,	...	1 death.	
,, ,,	13th	,,	,,	19th	...	3	,,	...	3 deaths.	

Since the last date named no other known case of cholera has occurred in Basra.

At Bagdad, on the other hand, an outbreak of very considerable severity has been, and still is, prevailing. It will be recalled that the disease reappeared there on June 4th after an apparent absence of two months. The figures for the four weeks ending July 4th were given in my last letter. The following are the returns since that date:—

From July	4th	to	July	8th	...	3	cases	...	2	deaths.
,, ,,	9th	,,	,,	16th	...	4	,,	...	2	,,
,, ,,	17th	,,	,,	23rd	...	38	,,	...	45	,,
,, ,,	24th	,,	,,	30th	...	29	,,	...	33	,,
,, ,,	31st	,,	August	6th	...	36	,,	...	22	,,
,, August	7th	,,	,,	13th	...	65	,,	...	54	,,
,, ,,	14th	,,	,,	20th	...	127	,,	...	105	,,
,, ,,	21st	,,	,,	27th	...	180	,,	...	133	,,

The totals for the present week will probably be still higher.

The outbreaks in the Shiah cities of Nedjef and Kerbela appear to have come to an end about the middle of July; from the former no cases have been reported since the 13th and from the latter none since the 20th of that month. At Suleimanieh, close to the Turco-Persian frontier, the mortality has been very high, as shown by the following figures:—

From July	12th	to	July	16th	...	47	cases	...	17	deaths.
,, ,,	17th	,,	,,	22nd	...	283	,,	...	208	,,
,, ,,	23rd	,,	,,	30th	...	342	,,	...	469	,,
,, ,,	31st	,,	August	4th	...	131	,,	...	228	,,
,, August	5th	,,	,,	12th	...	83	,,	...	162	,,
,, ,,	13th	,,	,,	20th	...	39	,,	...	51	,,
,, ,,	21st	,,	,,	25th	...	32	,,	...	31	,,

It will be impossible to mention here the many places from which the presence of cholera has been reported. They are situated mostly along the valleys of the Tigris and Euphrates and in the adjoining plains. The disease has spread up the Tigris at least as far as Mossul, where an outbreak of some severity has recently begun. The highest figures have been reported from Salahieh (in the Kerkuk district), from Mendelli and a large number of villages in that neighbourhood, and from among the numerous tribes inhabiting the lower reaches of both rivers. The extension of the infection up the Tigris to Mossul threatens Armenia, and through Armenia the Caucasus, with an epidemic; but the latter is still more seriously threatened by the alarming spread of the disease in Persia.

At the date of my last letter cholera had been epidemic for several weeks at Kermanshah and at many other places near the frontier; it has also spread to Kum and was reported to have appeared in Tehran itself, though nothing positive was then known as to the intensity of the outbreak there. Exact information is still lacking as to the extent of the epidemic in the capital or elsewhere but all reports agree in placing the mortality in the former at a very high figure and in indicating that the infection exists over a very wide area on Persian soil. The most exact figures have been furnished by Kermanshah; they are as follows (in continuation of the figures given on p. 177 of THE LANCET of July 16th):—

From	July	6th	to	July	12th	...	31	deaths.		
,,	,,	13th	,,	,,	19th	...	21	,,		
,,	,,	19th	,,	,,	26th	...	(information lacking).			
,,	,,	27th	,,	August	2nd	...	6	deaths.		
,,	August	3rd	,,	,,	9th	...	14	,,		
,,	,,	10th	,,	,,	16th	...	10	,,		
,,	,,	17th	,,	,,	23rd	...	3	,,		

These figures have been furnished by the Turkish Consul-General at Kermanshah and are based on the returns of the local authorities; but according to reports from the Ottoman Embassy at Tehran they are much below the truth, as the latter state that the deaths at Kermanshah were at one time as high as 150 per day. From Kermanshah the cholera spread to a large number of other Persian towns and villages, some of which were mentioned in my last letter but one.[1] It reached Hamadan at the end of May or the beginning of June; in the first week of June five or six cases and two or three deaths were occurring there daily. The further course of the disease here is not fully known, but on July 6th it was reported from Tehran that 300 deaths daily had occurred at Hamadan in the preceding week. The infection seems to have spread thence to Kum, where from eight to ten deaths were occurring daily in the first half of June. The date of the first cases in Tehran is not known but some suspicious cases were reported in the second week in June and the epidemic seems to have increased rapidly. Almost the earliest case there was that of Dr. Vaume, the Turkish delegate on the sanitary board which is supposed to sit at Tehran. He had been sent by the Constantinople Board of Health on mission to Kermanshah and the surrounding infected districts and returned to Tehran disheartened by his inability to induce the Persian authorities to take any serious measures. Almost immediately after his return to the capital he was attacked by the disease and died after a short illness.

According to a report from the Ottoman Embassy at Tehran, dated August 2nd, the mortality in that city rapidly grew to 50 or 60 per day. It progressively increased to 100, 150, 200, 300, and even 500 a day. Later inquiries placed the mortality, when at its maximum, at an even higher figure than this, some estimating it at 1000 deaths daily, while others thought it had attained to 1500 deaths per day. The same report estimates the total cholera mortality in Tehran at between 15,000 and 20,000 but adds that other authorities think that at least 25,000 persons lost their lives. The epidemic spread to the surrounding villages, including those where the embassies and legations usually spend the summer months. Cases occurred in the staff of the Ottoman Embassy and among the attendants of the Shah himself. The sovereign had arranged to leave Tehran for Kazvin but the cases of cholera occurring among his attendants on the day of his intended departure he returned to his summer residence near the capital. The city was largely deserted at the height of the epidemic; the shops and bazaars were closed and all public offices stopped work. Almost no public measures of any kind were taken to control the epidemic. Cemeteries were established quite close to the town but the report quoted speaks of putrid emanations from the bodies of the dead which were presumably unburied or very imperfectly buried. At the date of that report (August 2nd) the deaths had fallen to 40 per day but it was added that with the return of the population to the city and the appearance of the disease in the Jewish quarter a slight rise in the mortality had set in. This increase does not, however, seem to have been maintained and the latest reports from Tehran state that the disease has almost disappeared. It may be added that reports from Russian sources confirm the above facts and figures and add that in Tehran the European colony almost entirely escaped the disease, only three deaths from cholera occurring among them. The severity of the outbreak in some of the villages is shown by the fact that in one village, with a population of 5000, as many as 1500 persons died from cholera. As usual in cholera epidemics the earlier cases were the most severe,

[1] THE LANCET, June 25th, p. 1813.

many being fulminant in character, causing death in a few hours, but later the attacks assumed a milder form. No one, it is added, who entered the city from the surrounding districts for business purposes escaped an attack.

Details of the cholera epidemic in other parts of Persia are almost entirely lacking. All that can be stated is that at the end of June cholera was present at Shuster, Dizful, Sine (? Sihna), and Kazvin; that on July 6th it was reported from Khanikin, on the frontier, that over 200 deaths daily were occurring at Yer, Jerid, Mehanend, and Hamadan-Serai and that the disease had appeared at Ratada; that on July 8th cholera had *not* reached Tabriz (on the authority of the Turkish vice-consul in that town); that on July 19th the outbreaks at Sultanabad and Burujird were stated to be increasing; that on July 31st the Turkish embassy at Tehran telegraphed that cholera was prevalent ("la maladie règne") at Shiraz, Ispahan, and Meshed; that on August 8th Bushire was reported to be still free from the disease though cholera was prevalent at six hours' distance from that port; and that on August 16th the Russian delegate to the Constantinople Board of Health informed the board that some cases of cholera had occurred at Resht, Meshed, and Astrabad.

From this rapid survey it will be seen that cholera has spread over a very large portion of the Persian kingdom. It is, or has been, present at Meshed in the north-east, at Tehran and Resht in the north-west, and at Shiraz and near Bushire in the south-west.

The fears expressed in some of my earlier letters that the infection would spread to Meshed and the shores of the Caspian have thus been realised but fortunately it does not seem as yet to have extended across the Perso-Russian frontier to Transcaspia; though, as stated at the beginning of this letter a single case has been reported from Baku, on the Caucasian shores of the Caspian Sea. That case was reported by the Governor of Baku on August 4th (July 22nd, Old Style); it was then spoken of as a case of cholera, without any qualifying adjective. The patient recovered and it has since been spoken of as a "suspected" case of cholera. The Russian authorities declare officially that no other case of the disease has occurred in any part of Russia. Owing to the occurrence of this case Turkey imposed a "medical visit" on arrivals from Batum, although no disease existed there, and this port is quite 500 miles from Baku and separated from it by the whole width of the Caucasus. The measure was, however, suppressed a week later.

While the above has been the course of the epidemic in a northerly direction, it has at the same time been spreading southwards and south-westwards from Basra and the Shatt-el-Arab to the Arabian shores of the Persian Gulf and to that little known inland province of Arabia, the Nejd. It will be recalled that by the end of June cholera had appeared at Katif and Dekin; at Darein and Narvet, two villages in the Katif district; and in the province of Katar. No further news was received from here until July 29th, when it was reported from Basra that 11 cases of cholera and 23 deaths had occurred in the villages of Redarin and Naren in the *sanjak* of Nejd and that the disease had appeared at Ajir on the coast. On August 3rd a delayed telegram from Basra gave statistics showing that a very large number of places in the inland province of Nejd and the coast province of El Hasa had been invaded by the disease and that in many it had caused a high mortality. The following are the figures given in this telegram, but it should be added that most of the names mentioned cannot be identified on the best maps of these regions:—

		Cases.	Deaths.
At Tarvet	from June 7th to June 14th	126 ...	122
,, Redarin	,, ,, 7th ,, ,, 14th	34 ...	33
,, Zor	,, ,, 9th ,, ,, 11th	3 ...	2
,, Senayis	,, 11th	2 ...	1
,, Keden	,, 14th	2 ...	2
,, Katif	from ,, 11th ,, ,, 15th	8 ...	6
,, Katif, Tarvet, and Naren ...	,, ,, 3rd to June 9th	157 ...	136
,, Sufouf, Kout, Reffea, and Naatil ...	,, ,, 16th ,, ,, 20th	30 ...	30
	,, ,, 21st ,, ,, 25th	27 ...	27
	,, ,, 26th ,, July 3rd	25 ...	25
	,, July 4th ,, ,, 9th	68 ...	68
	,, ,, 10th ,, ,, 16th	25 ...	25
,, Mirez, Onyoun, and Jaffer ...	,, ,, 4th ,, ,, 9th	120 ...	113
,, Jaffer	,, ,, 10th ,, ,, 16th	2 ...	4
,, Edjir (? Ajir) ...	June 13th	8 ...	7

Constantinople, Sept. 3rd.

Looking Back.

FROM

THE LANCET, *SATURDAY*, SEPT. 23, 1826.

[*From our Correspondent.*]

LETTER FROM LEYDEN.

Magni nominis umbra. LUCAN.

The annual expenses of the student at Leyden are high. I was informed, by one of them, that it requires economy to come through the year with 800 guldens, about 74*l.*—a much larger sum than would be necessary in any other than an university town. In the Peterschurch are two monuments which no medical man would omit to see; the one is erected to the memory of Boerrhaave and the other to Camper. Boerrhaave's is an urn of white, placed on a pedestal of black marble: on the pedestal hangs a medallion of white marble, with the inscription, "Sigilum veri simplex," and in front is the dedication "Salutifero Boerrhavii, Genio Sacrum, natus d.31 Dec. 1668, Denatus d.23 Sep. 1738. The urn is entwined by a wreath of heads, in bas relief, which gives the whole a too overloaded appearance. Camper's monument is simple and neat; his bust in white marble, *à l'antique*, is placed on a pedestal of black; on the front of which is this inscription:—"Peterus Camper," geboren te Leyden, den 11 May, 1722, overleden den 7 April 1789. This bust is said to be a striking likeness of Camper; it was sculptured from his celebrated portrait by Runhard Vinkelis. Camper, although very much respected in Holland, was a very vain man, but his arrogance was almost insufferable after he became a member of the States' Assembly. It used to be a favourite expression with him when pointing out anything he supposed new, "people will always say, that Camper observed this." Boerrhaave was certainly a very rich man, but he did not gain all his wealth by physic; he partook of the commercial spirit of his countrymen, and was at one time a large speculator in wool. His favourite residence was at Lond, just a short distance from Leyden, which he purchased of an Englishman; it was here that he spent so much time in the cultivation of tulips. Brugmann, one of the Professors, is in possession of many of the letters of Boerrhaave; among others is one to a student, who aped Boerrhaave in his slovenly manner of dress. The old gentleman did not like to be mimicked, so he told him, "that although slovenness might become an old man, it was not fitted for a youngling." He was very avaricious, and old Gaubius was still more so; neither of them would give their advice to persons not well known without first having the fees. A nobleman of Mecklenburgh requested Boerrhaave's advice by letter, respecting his wife; he wrote him twice but got no answer. He sent him a third letter, with 100 ducats, and Boerrhaave, in return, told him that his wife must ride. Now as the Mecklenburghers have very fine horses, they understand by riding, exercise *à cheval;* the noble lady was put on the back of a fine roadster, and in a short time was jolted to death. The husband was very wroth, and wrote Boerrhaave a furious letter, but the old physician sent word, that by riding, in Holland people meant sailing on a canal. He had forgotten, however, that there were no canals in Mecklenburgh.[1]

[1] An excerpt only has been transcribed.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8464 births and 4989 deaths were registered during the week ending Sept. 17th. The annual rate of mortality in these towns, which had been 20·5, 18·2, and 17·5 per 1000 in the three preceding weeks, further declined last week to 17·0 per 1000. In London the death-rate was 15·3 per 1000, while it averaged 17·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·1 in Handsworth (Staffs.), 6·7 in East Ham, 7·1 in Hastings, 8·9 in Walthamstow, 9·0 in Burton-on-Trent, 9·6 in Reading, 9·7 in Bournemouth, 10·3 in Smethwick, and 10·4 in Wallasey; while the

highest rates were 24·0 in Walsall, 24·7 in Stockport, 24·8 in Warrington, 25·1 in Hull, 25·5 in Sunderland, 26·1 in Hanley, 27·8 in Salford, and 31·6 in Wigan. The 4989 deaths in these towns last week included 1192 which were referred to the principal infectious diseases, against 2291, 1636, and 1512 in the three preceding weeks; of these 1192 deaths, 949 resulted from diarrhœa, 73 from whooping-cough, 48 from diphtheria, 45 from measles, 39 from "fever" (principally enteric), 33 from scarlet fever, and five from small-pox. No death from any of these diseases occurred last week in King's Norton; among the other towns they caused the lowest death-rates in East Ham, Hastings, Bournemouth, Reading, Handsworth (Staffs.), Burton-on-Trent, Huddersfield, South Shields, and Cardiff; and the highest rates in Hanley, Walsall, Wigan, Warrington, Burnley, Preston, Hull, Sunderland, and Gateshead. The greatest proportional mortality from measles occurred in Walsall, Bootle, and Salford; from diphtheria in Hanley; from whooping-cough in Great Yarmouth, Bristol, Wigan, and Barrow-in-Furness; from "fever" in Hull; and from diarrhœa in Ipswich, Hanley, Wigan, Warrington, Burnley, Hull, Sunderland, and Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. Three fatal cases of small-pox were recorded in Oldham, one in Preston, and one in Gateshead, but none in any other of the 76 large towns. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals on Saturday, Sept. 17th, was five, against 13, nine, and eight on the three preceding Saturdays; one new case was admitted during the week, against none, two, and two in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1781, 1820, and 1816 at the end of the three preceding weeks, had risen again to 1929 at the end of last week; 340 new cases were admitted during the week, against 263, 266, and 234 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory organs, which had been 101, 108, and 129 in the three preceding weeks, further rose to 141 last week, and were 12 in excess of the number in the corresponding period of last year. The causes of 49, or 1·0 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Salford, Bradford, Leeds, Hull, Newcastle-on-Tyne, and in 43 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Bootle, Warrington, Manchester, Barrow-in-Furness, Rotherham, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·2, 16·0, and 15·7, per 1000 in the three preceding weeks, rose again to 16·5 per 1000 during the week ending Sept. 17th, but was 0·5 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·0 in Paisley and 14·3 in Aberdeen to 17·8 in Glasgow and 21·5 in Perth. The 547 deaths in these towns last week included 69 which were referred to diarrhœa, 13 to whooping-cough, eight to "fever," seven to diphtheria, three to measles, two to scarlet fever, and one to small-pox. In all, 103 deaths resulted from these principal infectious diseases last week, against 97, 100, and 86 in the three preceding weeks. These 103 deaths were equal to an annual rate of 3·1 per 1000, which was 1·0 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 56, 58, and 52 in the three preceding weeks, rose again last week to 69, of which 42 occurred in Glasgow, nine in Dundee, four in Edinburgh, four in Aberdeen, four in Paisley, three in Leith, and two in Greenock. The deaths from whooping-cough, which had been 24, 26, and 17 in the three preceding weeks, further declined to 13 last week, and included six in Glasgow and four in Edinburgh. The fatal cases of "fever," which had been six and five in the two preceding weeks, rose again last week to eight, of which two were registered in Glasgow, two in Dundee, and two in Greenock. The deaths from diphtheria, which had been one, four, and five in the three preceding weeks, further rose to seven last week, and included two in Glasgow, two in Edinburgh, and two in Greenock. The three fatal cases of measles showed a decline of two from the number in the preceding week, and included two in Glasgow, where the death from small-pox also was recorded. The two fatal cases of scarlet fever corresponded with the number in the preceding week and both occurred in Aberdeen. The deaths referred to diseases of the respiratory organs in these towns, which had been 55, 53, and 58 in the three preceding weeks, declined again to 55 last week and were 16 below the number in the corresponding period of last year. The causes of 17, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·5, 19·9, and 20·8 per 1000 in the three preceding weeks, declined again last week to 16·8 per 1000. During the past four weeks the death-rate has averaged 20·3 per 1000, the rates during the same period being 16·5 in London and 14·5 in Edinburgh. The 122 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 29 from the number in the preceding week and included 17 which were referred to the principal infectious diseases, against 49, 29, and 32 in the three preceding weeks; of these, 14 resulted from diarrhœa, two from "fever," and one from diphtheria, but not any from small-pox, from measles, from scarlet fever, or from whooping-cough. These 17 deaths were equal to an annual rate of 2·3 per 1000, the death-rates last week from the principal infectious diseases being 2·7 in London and 1·7 in Edinburgh. The fatal cases of diarrhœa, which had been 26 in each of the two preceding weeks, declined last week to 14. The 122 deaths in Dublin last week included 43 among children under one year of age and 20 among persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a considerable decline from the respective numbers registered in the preceding week. Four inquest cases and two deaths from violence were recorded; and 45, or more than a third, of the deaths occurred in public institutions. The causes of two, or nearly 2 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: J. C. Ferguson to the *Formidable*, on recommissioning; W. Bowden, D.S.O., to the *Boscawen*: and F. A. Brice to the *Revenge*. Staff Surgeons: P. H. Boyden to the *Prometheus*, on commissioning; T. W. Philip to the *Excellent*; and G. A. S. Bell to the *Breton*. Surgeons: P. L. Crosbie to the *Formidable*; R. M. Richards to the *Vulcan*; and J. C. Rowan to the *Fire Queen*.

Inspector-General of Hospitals and Fleets Duncan Hilston, C.B. (retired), has been appointed Honorary Physician to His Majesty, in place of Inspector-General of Hospitals and Fleets Dugald McEwan, deceased.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel F. B. Maclean joins at Woolwich. Major C. A. Lane is held in readiness to embark for Ceylon. Captain J. L. Jones is held in readiness for service in Ceylon. Captain S. W. Sweetnam proceeds from Colchester to Weedon for duty and assumes medical charge of the troops and Station Hospital. Lieutenant F. M. M. Ommanney is appointed Medical Officer, 6th (Somaliland) Battalion the King's African Rifles. Major J. Fayrer is to be appointed Medical Officer of the Duke of York's Royal Military School, Chelsea.

Lieutenant D. D. Paton, from Seconded List, to be Lieutenant (dated Sept 1st, 1904).

VOLUNTEER CORPS.

Rifle: 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment: Surgeon-Major J. P. Atkinson to be Surgeon-Lieutenant-Colonel (dated Sept. 17th, 1904). 1st Volunteer Battalion the Gordon Highlanders: The undermentioned Surgeon-Captains to be Surgeon-Majors:—G. M. Edmond (dated Sept. 17th, 1904) and G. Williamson (dated Sept. 17th, 1904).

THE TIBET EXPEDITION AND LHASA TREATY.

Colonel Younghusband's difficult mission, which called for the exercise of no little diplomatic skill, judgment, and courage, has been admirably conducted to a successful issue. The expedition has been of a very interesting and novel, but nevertheless of a very trying, character owing to the geographical obstacles that had to be overcome and the diversities of climate that had to be encountered. The military force on the march to Lhasa suffered to some extent from dysentery, hill diarrhœa, and sickness, and the transport difficulties at the altitudes which it traversed were immense, entailing very arduous work on the army medical, sick transport, and hospital services. The *Journal of the Royal Army Medical Corps* for the present month contains a short but excellent article by Major A. R. Aldridge, R.A.M.C., on the subject.

The date of the departure of the British force for India has been officially and definitely fixed for Sept. 23rd. Snow has already fallen on all the passes on the road to Gyang-tse, as well as at Gyang-tse itself. The temperature along the shores of Lake Palti is 12° lower than it is at Lhasa. The force has been able to purchase locally a certain number of blankets but the men are without fur coats and other articles of clothing which were found essential last winter. Store depôts have been erected at various points along the route to be taken by the mission on its return march. The number of native followers accompanying the troops on such occasions is always relatively very large.

THE LATE SIR WILLIAM FLOWER.

It is not perhaps generally known that the late Sir William Flower served as an army surgeon with the 63rd Regiment during the Crimean war where he and his colleagues regularly and successfully administered chloroform in their surgical operations despite the warning contained in an official memorandum issued by Sir John Hall, the medical chief of the army in the field, at the beginning of that war. Army medical officers happily did not share the views of their chief and used this anæsthetic with the best results, but chloroform was not at the time of the Crimean war so generally known—at any rate, in the experience of war surgery.

RECREATION GROUNDS FOR SOLDIERS AND THEIR CHILDREN.

We understand that the Army Council has under consideration the provision of recreation grounds for soldiers at barracks and other quarters where such provision does not already exist and a general inquiry is being made into the matter. While on this subject might it not be well for the Army Council to consider also the expediency of providing something in the shape of a playground for the children of a big barrack population instead of allowing them to wander about indiscriminately in the barrack yards in the vicinity of surface drains and gratings into which they may be often throwing stones and dirt by way of pastime?

THE WAR IN THE FAR EAST.

After a comparatively short lull following a period of almost continuous hard fighting which made rest on the part of the exhausted belligerents absolutely essential, but during which both sides have been heavily reinforced, active operations have again recommenced. A big and decisive battle somewhere in the vicinity of Mukden is fully anticipated to occur shortly. In the rush of events there has been neither time nor opportunity to do more than roughly estimate the casualties and losses. We have learned little or nothing of the medical aspects of the campaign nor are we likely to do so in present circumstances. From all we read and hear a very large number of Russian wounded (in addition to those at Mukden) have been congregated in Harbin; all the buildings are occupied as hospitals and the town has, in fact, become a vast hospital. The Russian headquarter staff admit that their losses from August 26th to Sept. 8th before Liaoyang were two generals, 256 officers, 21,809 soldiers killed, wounded, or missing, and 133 guns. According to a telegram from St. Petersburg, published in the *Echo de Paris*, there are over 35,000 wounded at Harbin under treatment. *If* this be the case it is no wonder that the town is represented as being one vast hospital. It is perplexing to form any idea of how this multitude of patients are fed—to say nothing of their being treated. The weakness of the Japanese in cavalry to follow up their enemy in the retreat from Liaoyang no doubt saved General Kuropatkin's army from more disastrous losses. In addition to the exhaustion following the marches and battles both the Russian and Japanese armies suffered from a failure in their food-supplies after Liaoyang—a greater difficulty to be surmounted in the case of the Russians on account of their longer distance from their base and their dependence on a line of railway, whereas the latter, having command of the sea, are much nearer home and can always make use of any available rivers and waterways. The difficulties in the way of transporting, accommodating, and feeding the sick and wounded must have been well-nigh insurmountable in the circumstances. With regard to the stores of all kinds captured at Liaoyang there is an extraordinary and irreconcileable difference between the Russian and Japanese estimates, but the latter are corroborated by lists of the actual numbers alleged to have been captured. It is needless to add that the supplies and feeding of a force and of its hospital population will greatly turn on this point. Port Arthur still holds out and the feeling of the besieged and besiegers is apparently daily growing worse, but we know little or nothing of the number of the sick and the wounded in that garrison or of their sufferings beyond what we may reasonably conjecture to be the case. To add to the internal troubles and anxieties of the Russian Government at the present time the recent appearance of cholera in the chief towns of the Russian Transcaspian district, whence it is feared that it may be introduced into Russia proper by way of the Central Asian Railway and the Volga, must not be lost sight of. Judging by previous experience the appearance of this disease, possibly in epidemic form, may probably be anticipated next spring and summer.

The Russian Viceroy has decorated four medical officers for having carried wounded from the fighting line under a fire of shrapnel in which two of them were themselves wounded. He said to them: "In the name of His Majesty the Czar I award you a sign of military distinction and thank you for your honourable deeds. Your services are as great and honourable as though done as soldiers. A timely assistance in the firing line enables many of our braves to return the sooner to the defence of the Faith, the Czar, and the Fatherland."

Correspondence.

"Audi alteram partem."

HOT WEATHER AND FOOD PRESERVATIVES.

To the Editors of THE LANCET.

SIRS,—The question raised in my letter of August 21st cannot be dismissed so lightly as Dr. A. S. F. Grünbaum seems to think. Those who like myself have had a considerable experience of out-patient practice in large cities know well that the children of the very poor are largely fed on other things than milk, that milk is often beyond the reach of their parents' means, and that, as the mothers say, "they get a bit of anything that's going." Whether milk was ever much preservatised in Liverpool or not does not affect my argument, for the mortality from infantile diarrhœa in Liverpool has always been high though it has seldom approached the figure recorded this year. But we do know that there have been prosecutions in Liverpool for boric acid in margarine and in cream, and my point is that if the dealers had not had the fear of the inspector before their eyes they would have used some preservative in milk and other articles during the period of excessive heat, and that had they done so the rapid putrefaction of the food and the consequent high mortality from infantile diarrhœa might have been to some extent, at least, prevented. Dr. Grünbaum seems rather shocked at my presuming to hold an opinion at variance with the recommendations of the Departmental Committee on Preservatives in Foods, but I plead in extenuation that most of those medical witnesses who were actually concerned with practice among the poor in large cities were by no means inclined to go the lengths advocated by the committee, that opinions expressed by a committee three years ago are not necessarily binding in the light of subsequent experience,

and that the Government which appointed the committee attaches so little importance to its recommendations that, although they were made three years ago, no attempt has been made to enforce them by legislation.

In response to my invitation to bring forward a single instance of injury from the reasonable use of boric acid or salicylic acid as a preservative in food Dr. Grünbaum refers me to a case quoted by Dr. E. W. Hope in his evidence before the Food Preservatives Committee. If Dr. Grünbaum considers this case convincing I can only explain it by the readiness with which the scientific mind can be deceived in the face of matters outside the laboratory. At the risk of being tedious I will briefly relate the case. Dr. Hope told the committee (Answers 6841, 6910–12) that a lady complained to him that she had made arrangements with her milk dealer to give him twice the amount he asked upon the condition that he should send her nothing but pure milk. One day her infant was taken violently ill. Nothing had been given it but under her own supervision. She at once went to the milkman and asked what he had been sending and he admitted that he had put some boric acid in the milk on that one day but on no other. Now it is apparent that the case is only "quoted," as Dr. Grünbaum happily expresses it, that it was only hearsay evidence, and that the statement that boric acid was only used on that one occasion was twice hearsay, and that the veracity of its alleged author was not above suspicion. But taking the story as it stands we are not told what were the symptoms in the child, what other food it may have had, nor whether it got well when other milk was supplied. Further, if the boric acid was the cause of the violent illness in the child one would expect to hear of similar cases in other children receiving milk from the same source and to hear of more or less continuous ill-health in children whose parents had made no special arrangements with regard to the quality of the milk supplied. This case will certainly not carry conviction to the "unprejudiced observer" and Dr. Grünbaum has not strengthened his case by referring to it. The researches of the Reichs-Gesundheitsamt by no means settle the question and, *pace* Dr. Grünbaum, the conclusions drawn from them have been effectually disproved by Liebreich. The experiments of Tunnicliffe and Rosenheim also are as strong in favour of the innocuousness of boric acid to children as any evidence alleged on the other side.

The distinction Dr. Grünbaum draws between decomposition and putrefaction in food is a purely artificial one. There is no reason to suppose that odourless, almost tasteless, bodies such as boric acid can allow decomposition to take place and at the same time destroy the signs by which it is made evident to the senses. But it is hardly necessary for me to insist on this point, for the medical officer of health of Liverpool has stated[1] that diarrhœa occurs at a time when food becomes rapidly *putrescent*.

The alleged drawback of preservatives that they open the way for dirty and fraudulent practices and make it difficult to teach care and cleanliness to the poor can have but little weight if it be true, as I maintain, that they keep food in a condition fit for consumption which would otherwise have to be thrown away. In a community in which probably 25 per cent. of the people are too poor to purchase enough food to maintain themselves in full health the importance of avoiding all unnecessary waste is obvious. Even if we grant all that has been alleged against preservatives their strongest opponents have not attempted to show that the use of them has ever raised the death-rate to 39 per 1000. I do not hold up the use of preservatives in food as a counsel of perfection. If our slums were abolished and our people were all wise and prosperous there would be less use for them, though I believe that in the case of temperance beverages they will always be needed to supply the place of the alcohol which keeps intoxicating drinks from going bad. What I do maintain is what I stated in my letter of August 21st, a statement which Dr. Grünbaum has not attempted to controvert—namely, that in the conditions under which the poor live in our large cities their food is certain to undergo rapid decomposition in hot weather unless preservatives are employed.

I am, Sirs, yours faithfully,

THOS. R. BRADSHAW, B.A., M.D. Dub., F.R.C.P. Lond.,
Physician to the Liverpool Royal Infirmary; Lecturer on Clinical Medicine, University of Liverpool.

Liverpool, Sept. 10th, 1904.

[1] THE LANCET, August 27th, 1904, p. 642.

TO MEDICAL FREEMASONS.

To the Editors of THE LANCET.

SIRS,—May I through the medium of THE LANCET once more appeal to medical Freemasons for their votes and influence on behalf of those candidates for the Masonic charitable institutions who are children of medical men and consequently have special claim on your readers. At the forthcoming election of the Royal Masonic Institution for Boys the "medical candidates" are: D. C. W. Wingrave, aged ten years, son of Dr. V. H. W. Wingrave of St. Albans; B. C. I. Russell, aged eight years, son of the late C. H. Russell, medical officer of health of Southampton; and H. J. Castles, aged nine years, son of the late Mr. K. Castles of Harrington, Cumberland. The "medical candidates" for the Royal Masonic Institution for Girls are: I. M. Sewart, aged eight years, daughter of the late Mr. J. H. Sewart of Lostwithiel; A. M. D'Arcy Sugden, aged ten years, daughter of the late Mr. D'Arcy Sugden of Buckfastleigh, South Devon; and L. Fausset, aged ten years, daughter of the late Mr. J. D. Fausset of Fleetwood. Votes for any of the above will be thankfully received by myself or our treasurer, Dr. J. W. H. Eyre, Wandle House, Wandle-road, S.W.

I am, Sirs, yours faithfully,

HAROLD S. SINGTON,
Secretary, St. Luke's Medical Lodge of Instruction.

44, St. Mary's Mansions, W., Sept. 16th, 1904.

THE COMPARATIVE INTELLECTUAL POWERS OF THE TWO SEXES.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 10th, p. 777, you did me the honour to mention my paper read at the meeting of the British Association and dealing with the progress of schoolboys and schoolgirls. I found by my observations that in elementary schools the balance of proficiency, even in arithmetic, inclines to the side of the girls. In this respect you express the opinion that "the intellectual superiority of girls ..... is so unexpected and so entirely opposed to the teaching of the world's history that we naturally turn to other possible sources of explanation. ..... The vulnerable features of these statistics ..... is that they refer to a period of life which both in boys and girls is subject to disturbances, sexual and otherwise. These disturbances ..... may offer some explanation of the fact that nearly the whole work of human progress can be traced to the maturer activities of the male and not of the female intellect." As my own opinion coincides nearly entirely with yours it seems that you had before you only a short excerpt of my paper which in reality puts forth the same views that you expressed. I enclose the official abstract of my paper by which you may convince yourself that what I suggested is the following: In childhood girls learn better than boys, probably in consequence of the quicker physical development of the female sex, but since not only in sciences but also in poetry and (with exception of the stage) in arts, the great work of human progress has been accomplished by the male sex, one is obliged to suppose that with the age of ripening the female intellect develops itself more slowly than the male one.—I am, Sirs, yours faithfully,

Dr. JOSEPH DE KÖRÖSY,
Director of Municipal Statistics.

Budapest, Sept. 19th, 1904.

*** We regret that imperfect information should have led us to imply that Dr. de Körösy had not appreciated the difficulty to which we referred, but we are happy to see from his letter and from the official report which he incloses that his opinion coincides with our own.—ED. L.

OBTURATOR HERNIA FOLLOWING MUSCULAR EFFORT.

To the Editors of THE LANCET.

SIRS,—I am sending notes of the following case on account of its rarity.

On August 27th a man, aged 40 years, when at work lifting weights was taken with great pain in the abdomen. He remained at work until 12 o'clock when he walked home and was seen by a colleague; he complained of great pain. Magnesium sulphate and calomel were administered, with

the only result of causing vomiting. The vomiting continued the whole of the next day, notwithstanding that morphine was administered hypodermically. On the 29th at 11 A.M. I saw the patient. He was in great pain and begging for relief; he was cold and almost pulseless. He was removed to the West Cornwall Miners' and Women's Hospital, Redruth. Strychnine was given and injections of brandy and coffee also to revive him. At 2 P.M., after lavage of the stomach, Dr. W. Blackwood administered ether and with the assistance of Dr. F. Hichens I opened the abdomen to find a hernial sac free in the abdomen. On nicking the neck several inches of dark maroon-coloured gut were liberated and some dark fluid was evacuated from the sac. The patient did not rally from the shock and died at 9 P.M., notwithstanding stimulants, &c., to reduce the shock. The case appeared to be the reduction *en masse* (spontaneously) of an obturator hernia. On passing the finger into the empty sac it went up to, but not through, the obturator foramen and the only explanation I can give is that the great peristalsis caused by the purgatives must have given rise to the condition.

I am, Sirs, yours faithfully,

Camborne, Sept. 13th, 1904. JOHN H. TONKING.

DEATHS UNDER CHLOROFORM AND THEIR PREVENTION.

To the Editors of THE LANCET.

SIRS,—There are two points in connexion with the death under chloroform which you record in your issue of Sept. 17th (p. 841) that I think are worthy of comment. The first is the fact that the patient died within seven minutes of the commencement of the inhalation, and the second that he died immediately after being lifted on to the operating table from the bed, or lorry? With regard to the first point Dr. F. W. Hewitt on p. 342 of his most admirable work on "Anæsthetics" draws attention to the fact that a large proportion of deaths occurring under chloroform take place within a few minutes of the time that the administration is started and he instances 75 fatalities in 68 of which the patient died within the first 15 minutes. I have before me at the moment of writing details of other 63 deaths under chloroform, all of which occurred during one year in the United Kingdom, and in 60 of these the patient died within a few minutes of the commencement of the administration of the chloroform, several after a few inspirations. With these figures facing me and with my own personal experience of practical anæsthetics I find it impossible not to differ from Professor A. D. Waller[1] in the view which he has expressed that deaths under chloroform are generally caused by overdose. I am disposed to think that overdose—that is, imbibition of an excessive and toxic amount of chloroform—is a comparatively rare cause of death and that when it occurs the condition produced by this overdosage is often a remediable one if proper measures are promptly adopted.

The most frequent and usual cause of death under chloroform—and no one with his eyes open can question it—is syncope arising from two ordinary physiological actions of chloroform on the human economy which are: (1) to produce vagus excitability (Embley); and (2) to abolish the vascular mechanism which compensates for the mechanical effect of gravity (Leonard Hill). When death occurs at or immediately after the moment of lifting a patient from the bed to the operating table during chloroform anæsthesia, as in the case you record, this latter action will in many cases probably be the causative factor and no overdose is necessary. When, on the other hand, death occurs before complete unconsciousness from "fright syncope" (of which numerous instances are recorded) and in cases where the first incision is made during imperfect anæsthesia excitation of the vagus is probably the predominating factor. Further, when a patient is attacked by syncope, whether he has been chloroformed or not, restorative measures are seldom of any avail. On the other hand, most anæsthetists, especially those who have to do with the instruction of students or post-graduates, will be able to recall cases where the patient "had a little too much," stopped breathing and turned blue, or even pale, but active restorative measures being applied, no great difficulty was found in getting rid of the excessive dose or, at any rate, restoring animation.

Personally I have never seen a case of chloroform syncope but two cases occurred recently in the hands of friends of mine. I am quite confident that in neither of these instances was any overdose of chloroform administered and such deaths cannot be avoided by the use of Dubois's or Harcourt's dosimetrical apparatus. However interesting the investigations of the British Medical Committee may be from the physiological side one is somewhat at a loss to see what practical outcome of value we can expect to result from them. The chief advantage claimed for chloroform as opposed to ether in the past has been its handiness and if we handicap it with an apparatus of an extremely fragile nature, like Harcourt's, or with one weighing a couple of stones, like Dubois's, then surely one of the strongest claims of this anæsthetic to favour has vanished. Moreover, it is impossible to suppose, even were the fact absolutely established that overdose with either of these ingenious apparatus was impossible, that the country practitioner or the metropolitan anæsthetist would go to his cases with one of these apparatus in his bag and use it as a matter of routine. Time and space have a lot to do with practical surgery and the hospital theatre cannot be turned into a laboratory nor the medical man into a beast of burden. In the case to which my friend, Dr. W. J. McCardie, referred at Oxford[2] 15 minutes were required to "dull or abolish the lid reflex with a 1 per cent. vapour and 12½ minutes with a 1½ per cent. vapour." Where is the surgeon who will stand by quietly waiting during these periods on a busy hospital "field day" in the year 1904? Safety in the administration of chloroform and a diminished death-rate under anæsthetics are not to be found in the employment of dosimetrical apparatus, "blow-through" or otherwise. In my humble opinion it will be found in quite another way and that is in the rapid induction of anæsthesia in all possible cases by means of a different agent from chloroform—viz., ethyl chloride, which in certain cases can be followed with advantage by ether. When once unconsciousness is induced and anæsthesia present by means of this agent or these agents the dulled sensorium and stimulated cardio-vascular system may be subjected to the excitant and depressant action of chloroform, on them respectively, not with absolute freedom from risk of overdose it is true, but with the comforting knowledge that the patients will not suddenly "turn pale and die" from syncope "after the first few breaths of the anæsthetic." Risk of overdose during the operation may surely be eliminated if a reasonably skilful and careful administrator be employed.

It may be considered bold for me to make this statement but I do so on the strength of a personal experience of considerably over a thousand cases of ethyl chloride narcosis and ethyl chloride sequences during the past year and I believe my favourable opinion of ethyl-chloride-ether-chloroform sequence is shared by Dr. McCardie whose experience with the first-named anæsthetic is unique. During this time I have had all classes of patients in my hands, from the hysterical nervous female to the whisky saturated alcoholic male, and all have been negotiated with ease—at any rate, with ease as regards the first 15 minutes. The most striking thing is the complete absence of anything but quite momentary struggling in alcoholic patients of the worst type. Before they have time to get violent voluntary movement and involuntary "excitation movements" are paralysed and they settle down into an even, if at times somewhat stertorous and noisy, anæsthesia. With ethyl chloride properly administered unconsciousness is obtained in from 15 to 20 seconds, anæsthesia in less than a minute, and profound ethyl-chloride-ether anæsthesia in two and a half minutes. Ethyl chloride as an "introducer" to chloroform anæsthesia is certainly worthy of the attention of the profession. The progress of this anæsthetic during the past two years has been remarkable and will, I sincerely hope, continue. Were it generally realised that practically nothing but a Clover's inhaler or an Ormsby is required to administer it satisfactorily I think it would be more widely used *per se* than it is, but the continual "hatching" of new "special" inhalers for the drug, which are turned out at the rate of rather over one a week, tends to create the impression that the administration is a difficult matter and a very special apparatus necessary, adding to the bulk of the practitioner's armamentarium. When every medical man gets to know that the Clover which he already possesses, or ought to possess, can for a most trifling outlay be adapted for an ethyl-chloride-ether inhaler by any

[1] THE LANCET, Nov. 28th, 1903, p. 1461.

[2] THE LANCET, August 20th, 1904, p. 39.

instrument maker he will be more likely to employ ethyl chloride for brief operations where the use of chloroform is unnecessary, if not quite unjustifiable. In this way, eventually, I think, will the present discreditable death-rate under anæsthetics, to which Professor Waller has so eloquently drawn attention, be very sensibly reduced and painful incidents such as you have just recorded be avoided.

I am, Sirs, yours faithfully,

Edinburgh, Sept. 17th, 1904. THOMAS D. LUKE.

PHIMOSIS AND HERNIA.

To the Editors of THE LANCET.

SIRS,—In connexion with the causal relation between phimosis and hernia raised by Dr. H. Lyon Smith in his letter in THE LANCET of Sept. 17th, p. 858, permit me to say that from my experience at the City of London Truss Society I can fully endorse Mr. E. M. Corner's belief that phimosis has but little force in producing a hernia. The essential causes of inguinal hernia in young infants, male or female, are a patent processus vaginalis and distension of the intestines with gas. The more a child cries or strains, provided there is no open peritoneal pouch, the less likely it is to develop a hernia, for the arching fibres of the internal oblique and the transversalis are thus strengthened and effectually close any weak spot there is. Distension is nearly always due to improper food. Severe phimosis is often seen without hernia. Hernia does not appear to be more than ordinarily frequent in boys with phimosis. Jewish boys seem to be from the number that present themselves for treatment more commonly the subjects of hernia than their Gentile neighbours. Although allowing that a very tight phimosis may possibly be one of the factors in inducing descent of the bowel into a sac already in existence I am perfectly sure that circumcision will not of itself cure such a hernia, though, as Dr. Lyon Smith points out, the application of a truss with circumcision might. Careful attention to errors in diet and the application of a truss are much more likely to be the means whereby cure is effected. Circumcise those cases in which it is needful, but do not neglect proper treatment for the hernia by truss or operation.

I am, Sirs, yours faithfully,

Harley-street, W., Sept. 19th, 1904. W. MCADAM ECCLES.

THE TREATMENT OF HÆMORRHOIDS AND ALLIED CONDITIONS BY OSCILLATORY CURRENTS OF HIGH TENSION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 10th, p. 793, Mr. P. Lockhart Mummery seems to assume that the method of treatment first described by Professor Doumer and adopted by myself with results as given in a recent paper is based upon nothing more solid than empirical grounds. I am bound to say that such a statement is entirely inaccurate and could not have been made by anyone who had taken the trouble to consult the literature of the subject. I may also remind him that the mode of treatment which he describes as "new" has been before the profession for seven years and has formed the subject of an already considerable number of papers in continental and American medical journals.

It is quite true that we do not know everything concerning the physiological action of these oscillatory currents; the same might be said with equal truth concerning a great many of the remedial agents in common use. I might even go further and declare that the employment even of empirical measures by trained observers may not be altogether unjustifiable. In the present instance, however, I have no such position to defend. The idea of applying high-tension currents to fissures and allied conditions is based on sound physiological and pathological knowledge. We know that these currents have the property of abolishing the excitability of sensory nerve endings and also of removing the conductivity of motor nerves. Without going any further into physiological questions we may find here ample justification for applying an agent possessing such powers to the treatment of sphincter fissure. There we find an exaggerated sensibility of the sensory nerve endings, together with spasm of the sphincter muscle fibres. On theoretical considerations, therefore, the application of high-tension oscillatory current is plainly indicated and in my opinion the clinical results obtained are as satisfactory as one could wish.

I quite agree with Mr. Mummery that the haphazard use of electricity as a remedial agent by those who are untrained in methods of accurate physiological observation is undesirable. It is true that a certain class of patients exists which revels in complicated and impressive instrumentation but such will not find their ideal in the consulting-room of anyone who has at heart the serious application of electro-therapeutic measures. Instrumentation may be necessarily complicated but this is a question which bothers the physician only and need in no way concern his patient.

I am, Sirs, yours faithfully,

Devonshire-street, W., Sept. 20th, 1904. T. J. BOKENHAM.

AN EASY METHOD OF OBTAINING EXFLAGELLATION OF THE MALARIAL PARASITE.

To the Editors of THE LANCET.

SIRS,—Having till recently failed to get exflagellation in crescent infection I have lately used a method which has proved both simple and very efficacious. This consists in mounting a drop of blood of the usual size on a slide wetted with ordinary cold water held at an angle so that no excess remains. This is quite easily done by a brush or with the finger and the least possible quantity of water is sufficient. The blood is not otherwise "mixed" with water. The red blood corpuscles no longer show a tendency to form rouleaux and the process of exflagellation is the more easily observed. The red corpuscles do not undergo any notable alteration but the leucocytes become a good deal more refractive. Having had no success by the method of breathing on the cover-slip, &c., I at once got exflagellation in the first three cases of crescent infection and the first case of tertian fever with gametes was also successful. Tertian fever is common enough here. Since writing the above I have to-day had a case of quartan fever with abundant rosettes in which well-marked exflagellation was seen.

I am, Sirs, yours faithfully,

J. CROPPER, M.D. Cantab.

Ramallah, Palestine, Sept. 7th, 1904.

BULLET WOUNDS OF THE BRAIN.

To the Editors of THE LANCET.

SIRS,—Referring to my paper on a case of the above in THE LANCET of Sept. 17th, p. 825, my attention has recently been called to a somewhat similar case published by Mr. A. E. Barker in THE LANCET of Dec. 2nd, 1899, p. 1508. In this case the bullet entered the hard palate and lodged "in the centre of the brain" one and three-quarter inches from the surface of the skull. Lateral and antero-posterior skiagraphs were taken and the bullet was successfully removed by Mr. Barker 69 days after the injury. I stated in my paper that I had not been able to find a case where the bullet had been removed from the depths of the brain on the results of x-ray localisation.

I am, Sirs, yours faithfully,

Cardiff, Sept. 21st, 1904. WILLIAM SHEEN.

TRAVELLING IN EGYPT.—Messrs. Thomas Cook and Son have just issued their new programme of arrangements for travelling in Egypt, by which it appears their steamers will commence to run between Cairo and the First Cataract in November and continue until the middle of March, with connecting steamers between the First and Second Cataract. A new and interesting feature is the arrangement of combined bookings by Messrs. Cook's steamers and the Egyptian and Soudan Railways, enabling tourists with only limited time at their disposal to make their visits to Upper Egypt more rapidly than can be done by using the steamers only. Tickets will be issued to Khartoum and Gondokoro. The facilities afforded to the travelling public for inspecting the wonderful remains of ancient civilisation which adorn the banks of the Nile are now greater than ever, and with luxurious hotels, not only at Cairo, but at Luxor and Assouan, there is every probability that Egypt, with its incomparable climate, during the coming winter will receive a larger share than ever of the health- and pleasure-seeking public.

MEDICAL NOTES FROM THE FAR EAST.

THE following notes are from the pen of a special correspondent who has been making a tour round Korea, North China, and Japan. He visited Seoul, Chifu, and Tientsin and from this last city went to Peking, at which place the following notes commence.

Peking, July 20th.

A brief visit to Peking, three and a half hours up the line, has been of more general than medical interest. Here are legation guards of the eight nations, Russians and Japanese included, and in the British legation is the fine Chinese building used as a military hospital for the British guard, four of whom were in-patients and of no professional interest. Dr. G. D. Gray from Central Africa, as legation physician, has succeeded the late Dr. Wordsworth Poole, whose work in the siege and subsequent death from typhoid fever are recorded on one of the several pathetic and exceptionally well-written brass epitaphs in the legation chapel. Dr. G. E. Morrison, the *Times* correspondent, is of course one of the best known medical men in Peking and happens to be at home—an exception rather than the rule with him—but his narrative has mostly been non-medical and for his thrilling and varied medical experiences we must ask him to hurry up and to publish his Reminiscences himself. But thanks to him I have had the privilege of seeing and hearing of the excellent work being done by medical missions in the city. The Americans have a brand new hospital, up to date in all respects, but I have only had time in pelting rain to visit the hospital of the London Missionary Society, instituted in 1861 and now for four years past managed by Dr. T. Cochrane. In 1898 and 1899 as many as 30,000 visits were paid by out-patients each year to the hospital. Then came the Boxer outbreak. But last year confidence began to be restored and there were 20,000 attendances with 124 in-patients. It is a fine example of a struggle with adverse circumstances and, despite the drawbacks of extemporised buildings and half-trained assistants, the success of laparotomies, lithotomies, and other major operations without a single death is remarkable. Now Dr. Cochrane has made a bold move and is building a new hospital and medical school, complete with lecture rooms, laboratories, and residential rooms for Chinese students. The main block of this fine building is now nearly finished; the whole will cost 50,000 taels (£6000), towards which the Dowager Empress has made her first subscription to a foreign benevolent institution of 10,000 taels. It is noteworthy that the hospital has of late years been entirely self-supporting, local subscriptions making up the difference between the expenses and the receipts from patients, the latter being obliged, except in case of destitution, to pay two sens a visit to prevent the natural tendency of the Chinaman on seeing a drug-shop to feel ill or to lay in a store of medicines against the time when he may feel ill. The building of this new college, however, calls, of course, for funds, and few better objects of philanthropy could be devised, for it is only by educating the intelligent Chinese in a subject so obviously beneficial as European medical knowledge that we can hope to make them appreciate, respect, and hanker after friendship and intercourse with European nations. The only case of special interest that I saw was that of a court eunuch, admitted for some other complaint than that of cicatricial stricture or stone from which they usually suffer. Mutilated, of course without chloroform, at the age of 15 years in order that he might receive employment about the court and so obtain influence for his family, this man had the voice, the pubic hair, and the general secondary characteristics of a man, with a somewhat myxœdematous fulness of the skin, and his genitalia had been so completely removed as to leave only an opening to the urethra just below the pubes. The common results are a stricture so fine as to give rise to great difficulty in micturition and the finest thread-like stream, for which operation is often sought and carried out without great difficulty. A perineal urethrotomy is often the best form of treatment. Mention may also be made of a beggar-lad who was admitted for the loss of both feet from frost-bite and who was saved from death in the streets and the ravages of dogs by being admitted into hospital, the result being a couple of useful stumps.

Shanhaikwan, July 22nd.

A 12 hours' run brought me yesterday evening to this station, where the fortunate traveller may spend the night with the hospitable 30th Punjabis, and the unfortunate may with difficulty find a room in the hotel. It is another military menagerie, with the difference in the absence of the Russian detachment, whose officers were very popular with our Indian mess until they were withdrawn. Occasional brawls occur and only a few days ago a couple of Frenchmen and several Japanese lost their lives in such a quarrel. At Shanhaikwan the Great Wall of China, built in vain to keep out the Tartars and Mongols, ends in the sea, and now from the top of it may be seen a party of Sikhs practising flag-signalling. In 1900 its forts were dismantled and their modern guns were sent home to Europe by the Powers, who have now agreed to guard the line in sections. Two stations after leaving Taku are garrisoned by British detachments; the last few stations before arriving here are manned by Japanese. An hour back down the coast is Peitaiho, the fashionable watering-place of North China, and between that and here is the small port of Chingwangtoo, of considerable importance because it remains ice-free throughout the winter, whereas Taku is frozen up for three months. The 30th Punjabis here are between 700 and 800 strong. During their two years in the station 40 men have been invalided with tubercle. They are occupying the same barracks as were tenanted by the 4th Goorkhas who similarly were severely affected by tubercle until they were put into good barracks in India last year, since when they have been free. These barracks at Shanhaikwan are often two feet under water; even now the surface water is only three feet below the soil. The buildings are very unhealthy and rent is all the time being paid for them to the Chinese owner. A good site and a good supply of ready-made bricks are close at hand of which both Germans and French have readily availed themselves. Many memoranda have been sent in on the subject but still nothing has been done and the soldiers continue to be invalided from tubercle. It is hoped that the return of Colonel Macpherson from the front will be followed by improvement in all these serious defects, which otherwise would be wholly unpardonable and a national disgrace.

Niuchwang, July 25th.

Another 12 hours' run in a far less comfortable train brings me to Yingkau railway station on the right bank, or neutral side, of the Liao-ho; on the left is Yingkau, or the treaty port of Niuchwang, with 70,000 Chinese inhabitants and a foreign settlement administered by the Russians. Three miles up the river on the left bank is Russiatown; 30 miles up is old Niuchwang, conceded by the wily Chinese, who drew up the Treaty of Tientsin in 1867 and thought, rightly, that we did not know that the so-called port which they were throwing open to us was 30 miles up the river and of no use for our purposes. But might appears to be the chief form of right recognised by Europe in her sordid dealings of the last 60 years with China and so we have the prosperous port of Niuchwang at the mouth of the chief river of North China.

Plague is not infrequent here. Last year there were estimated to be 1000 cases between August and December; about 40 of the patients recovered in hospital. There were probably many more unreported cases, but those given were enough for the port to be declared infected. The English medical officer to the administration, Dr. C. C. de B. Daly, is at present away on leave, and his work is being done by a missionary of the Scotch Presbyterian Church, Dr. Bander, whom I found assisting Dr. Brown of Chang-tu-fu to remove a cataract. There appears to be little typhoid fever here but a good deal of tubercle, especially of the glands and the bones. The Red Cross hospital of 40 beds was founded in 1894 by subscriptions mainly from the wealthy Chinese of Shanghai, who subscribed $10,000 (£1000) in the first day and have sent generous subscriptions since for the medical and general relief of their poorer countrymen. The use of the hospital, which is well stocked in every respect, was offered to both Japanese and Russians, both of whom have refused all offers of help, and the hospital is therefore used as a general civil hospital for the poor of Niuchwang. There are no trained nurses.

There have recently been about 1500 Russian troops in and about this port but there appears at no time to have been any provision on a large scale for sick and wounded. A report was recently sent home by a correspondent that hundreds of Russians were lying here sick and wounded

without any medical, nursing, or other attention and that the Russian authorities refused to allow even Dr. Bander and others to give their services. I can only imagine that either the correspondent was mis-stating facts or else that a certain number of wounded may have been brought in here for a few hours and were awaiting removal by a hospital train. A foreign military attaché, just down from Liaoyang, was giving me yesterday the results of his special inquiries into hospital arrangements, on which he has reported at length to his Government. The dearth of medical arrangements on the Russian side appears to have been much exaggerated. Their army medical service is limited in number and function; they supply, it appears, only the regimental medical officers and the staff of the bearer companies and officers attached to the personal staff of each general. All the hospitals and hospital trains are supplied by the Red Cross which plays a rôle of even greater importance than the Red Cross of Japan. Almost every provincial government in Russia and Siberia and many wealthy personages, both of royal blood and in the commercial world, undertake the complete equipment and support of a hospital train or hospital and so far as my informant, a layman, could judge they were all not only well but magnificently equipped. The trains were furnished with swinging cots on springs, with baths, kitchens, and operating theatre and complete arrangements for a staff of four medical officers, so many nurses, and 36 attendants on each train. Indeed, Dr. Kanal, the extremely friendly and gentlemanly medical officer, ranking as Lieutenant-Colonel and attached to the administration here, talks with some contempt of the Red Cross superfluities, just as one heard similar complaints against some of the private hospitals in South Africa. He speaks, naturally enough, with still greater fluency of the dangerous independence of the Red Cross from the Army Medical Service. As with much else in the Russian system there is plenty of it and of the first quality, but it lacks organisation. There can be no doubt that the only proper system is that of the Japanese Red Cross which coördinates all private effort into one machine, working directly under the army medical authorities, an undertaking being given that their equipment and supplies shall be of the same kind only as that supplied by Government. Thus, the succour of sick and wounded is made essentially a second consideration to the primary interests of the campaign, that is of the State; and silly jealousies between private and regular medical supplies and aid are avoided. But, to return to the Russian system, there is no doubt that there is an abundant supply of well-equipped hospital trains, dating back to the very opening of the Siberian line, when amongst the first appearances were a police wagon and a "sanitary wagon" painted in white with a Red Cross on it. And it seems highly probable that any sick and wounded in or around Niuchwang may have depended on the arrival of a hospital train to treat them and to carry them up the line rather than that they should have been deliberately neglected. The Russian administrator, M. Victor Grosse, tells me himself that the wounded are taken to the junction at Tashichiao or to the base hospitals at Liaoyang and Kharbin, or beyond the border to Chita and Irkutsk, or finally to Moscow, their distributing centre, or to their sanatoriums in the Crimea. St. Petersburg and Moscow gave a million roubles each for this Red Cross work and included in its staff they have such well-known men as Alexandrovsky, head of the Red Cross, and Professor Zoege von Manteuffel, professor of surgery at Dorpat, who is now chief of the Red Cross at Tashichiao. Amongst others whom I met at M. Grosse's was Professor Vussakovitch, professor of bacteriology and pathology at Kieff, who was recently working for three months with Haffkine at Parel in India and is now sent out specially to secure the troops against plague and cholera. As he says, his position is likely to prove a sinecure, for there evidently is no very serious illness amongst the forces on either side, although it will be realised that the usual plague season here only begins in July or August and dies off in December; and winter again may produce another series of ailments. It is interesting, by the way, to hear that winter, rather than stop the campaign, will prove of unquestionable advantage to the Japanese, for here, where the thermometer falls to 20° below zero, 50° of frost, the country is frozen so hard that the transport can travel freely without hindrance in any direction; a few cases only will occur of frostbite. The river itself is always frozen and with care may provide an excellent surface for sleigh traffic. Fortunately, these Russian officers are extraordinarily good linguists. Dr. Kanal, whose native tongue is Finnish, speaks Russian, French, and English with about equal fluency. "What," said the Swedish attaché to a Russian cavalry officer, who had just been talking each of these languages and was now talking to a Spaniard, "you talk Spanish too?" "Yes, naturally enough," was the reply, "considering I'm a Spaniard." He was the fine spokesman and gentleman, Prince Jeamé de Bourbon, son of Don Carlos, now a familiar figure in this town. But familiar he will be no longer, nor any Russian officer. All day long, from 4 A.M. to 8 P.M., on Saturday and Sunday we have been hearing the sound of guns and from the roof-top through our glasses watching the shells burst on the hills a few miles south of Tashichiao, from 12 to 15 miles away. Chinese reports tell us of casualties in thousands and still yesterday evening the important railway junction of Tashichiao remained in Russian hands. But this morning we were awakened with the news that the Russians were at last evacuating the town in earnest and climbing to the roof-tops we saw them march out along the street at our foot and away to Russiatown which at 9 o'clock went up in flames, a vast cloud of smoke blotting out for us a quarter of the landscape. A visit to Russiatown in the afternoon showed us the whole place gutted, not by fire, but by the Chinese, who were still digging away, naked or clothed only in a loin-cloth, with unprecedented energy at the remaining coal-heaps, wrenching away doors and windows, and ripping off the roofs of galvanised iron. Only the heaps of forage had been burnt and they were still smouldering on. The houses represented purely and simply the downfall of Russia, the letting loose, as greyhounds from a leash, of the lowest-class Chinese, the Yellow Peril without a doubt, from all semblance of law and order. At four o'clock the first Japanese scouts arrived; at nine there appeared a troop of 50; and feeling now the impossibility of getting within the Russian lines I am taking the next boat back to Chifu and Shanghai so as to be in time to visit the Japanese.

PS. *Nearing Shanghai, August 1st.*—I have been hearing a good deal about Russian sick and wounded from refugees; 77 arrived on Friday at Chifu from Port Arthur; one recently from Liaoyang was on our boat from Niuchwang. One well-informed man of affairs from Kharbin is on board this boat, having left Mukden on Monday evening at 5 P.M., at which time he is sure the Liaoyang line had not been cut, although he himself came across to China and down the Chinese railway from the up-country terminus, Hsin-min-ting, 40 miles from Mukden. Apparently there *are* military hospitals in the Russian army besides those under the Red Cross Society; as with us they are nursed by female nurses and are largely staffed by reserve medical men drawn from civil life, who have been excused military service in return for an unpaid liability to be called out in time of war. This of course, tells heavily on many of them who have had to throw up their practices and have to support wife and family while only receiving 144 roubles (£14) a month, less than half the pay of a civil surgeon in South Africa. As with us, the military hospitals, except for local private aid, have little beyond the necessaries laid down in regulations, while the Red Cross hospitals are equipped with lavish magnificence. This gentleman has himself seen No. 20 hospital train, and each is arranged to take some 200 lying-down patients, 400 in all, as compared with the 100 that were carried by our five South African trains. I am bound to say that with the picture of the latter still fresh in my mind I shall feel sceptical as to the possibility of any train having comfortable accommodation within manageable limits for so many patients until I have seen one myself. But the evidence is certainly good. The hospital accommodation at Kharbin—one of those extraordinary Russian cities of only four years' growth—is on a very large scale and 21 "barracks"—presumably pavilions—have recently been built for hospital work in addition to 400 for healthy troops. My informant himself saw many trainfuls of wounded come in from Tashichiao which he says was only an artillery action. From Kharbin the more slightly wounded and sick are shipped on specially fitted out barges up the Sungari River to Blagovestchensk, Nicholsk, Chita, Khabaroff, or any other station on the Usuri line which runs from Vladivostok to Khabaroff. Chita especially is becoming a big centre for hospital work and many of the troops have already been able to get back to the fighting

line. Their spirit is good and there is no doubt that the Russians, even those who are fairly disinterested and those who are opposed to the war, although expecting Port Arthur to fall within six weeks, are convinced that sooner or later Russia must win by force of numbers. With all deference to the *Times* critic there is no getting over the fact that at every ten miles up to Lake Baikal from Russia there is now a crossing station, that 16 pairs of trains can now pass over the line daily, and that in five weeks ending July 22nd the 10th and 17th Army Corps were brought into Kharbin, a force of 110,000 men all told. Horses have to come from Tomsk; but there is abundance of hay and grain in Manchuria itself, which is an astonishingly rich country and is now enjoying an exceptionally good harvest.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Inaccurately Dispensed Prescriptions: Prosecutions.

EARLY in last month two interesting cases were heard at the city police-courts in connexion with the dispensing of medical prescriptions. The first case was that of a druggist named Heath who had been asked by a messenger from the health department to compound the following prescription written by Dr. J. D. McCrindle, assistant medical officer of health:—

Quin. sulph.	3 iv.
Ac. sulph. dil.	3 iv.
Aq. ad	℥ vi.

M.
Sig.: A dessertspoonful every four hours as required.

The mixture should have contained 240 grains of quinine sulphate and 240 minims of diluted sulphuric acid. The messenger, a woman, left the prescription and called later in the day for the mixture. The defendant then asked her if the patient was very ill, because, he said, it was rather an extraordinary dose. He charged 2*s*. The woman handed the bottle to Inspector Jones who came into the shop and explained who he was. The defendant then said, "I did not put the half ounce of quinine in; I only put in half a drachm; I thought it was a mistake." On behalf of the prosecution it was urged that it was the duty of the druggist to make up a prescription obviously coming from a medical man without using his own discretion as to the amount of any particular drug which he should put in. It was also pointed out that the price of 23 grains of quinine was only 1*d*., whilst the price of 240 grains was about 9*d*. Dr. McCrindle, who gave evidence, stated that he should have expected compliance with such a prescription. The defendant gave evidence on his own behalf and said that he should not think of putting half an ounce of quinine into a six-ounce mixture. The ordinary dose they were accustomed to make up was from one to two grains. When the woman called with the prescription he inquired the complaint of the patient and the address of the medical man and he would not make up the prescription until the woman came back and he had made these inquiries. He also stated that he thought that the prescription was too well written to have come from a medical man and concluded that it was a copy. After a long consultation the bench said that they considered the case to be one of the most important ever brought before them. Up to a certain point the defendant exercised a very proper discretion. But he did not go far enough. When he convinced himself that there was something in the prescription which suggested to his mind that there was possible danger to the patient he should have insisted that the name of the medical man was given to him and he might have absolved himself from all personal responsibility by consulting the medical man. The bench did not think that there was any dishonest intention on the part of the defendant but he had been negligent in his duty and they had no alternative but to convict, though they had tried in every conceivable way to discover whether it was possible to justify the action of the defendant. The penalty would be 40*s*. and costs.—The second case was that of Needhams (Limited). In this instance the messenger from the health department called at one of the branches of this firm and left the following prescription to be made up:—

Pot. iodid.	5 vi.
Aq. chlorof. ad	℥ vi.

M.
Sig.: One teaspoonful with a little water three times a day.

The capacity of the bottle supplied by the defendants was only five and a quarter ounces and it contained only 334 grains of iodide of potassium. The dose given on the bottle was one tablespoonful instead of one teaspoonful, as ordered by the prescription. One tablespoonful contained 32 grains, while the dose ordered by the prescription was seven and a half grains. The prosecution complained chiefly of the size of the dose, which would have had injurious effects if taken. They did not suggest fraud but there was gross negligence. Dr. McCrindle in his evidence said that a dose of the size in question would have had a serious effect upon a weakly person. Cross-examining counsel tried to secure an admission that when a preparation was ordered in a six-ounce bottle the usual dose was one tablespoonful, but Dr. McCrindle refused to admit this. For the defendants it was urged that the greatest care was taken in the selection of assistants and that the person who was responsible for the error in question had served his apprenticeship with the firm and that they had never had the slightest complaint about him. There was no intention to defraud the purchaser, for the assistant had actually charged 4*d*. or 5*d*. less for the mixture than he should have done. Messrs. Needham employed Dr. A. Bostock Hill to go round from time to time and have prescriptions made up at their shops with the object of ascertaining whether their assistants were doing their work properly. The prosecution stated that it had been necessary on a previous occasion to caution the firm about carelessness. The bench held that there was no intention to defraud but that there was carelessness and for that the defendants must pay the costs of the prosecution.

Health of Worcestershire: Decline in the Birth-rate.

The county medical officer of health, Mr. G. H. Fosbroke, has recently issued his report for the year 1903. Only two districts in the county have materially increased during that twelvemonth—viz., King's Norton by 3359 and Yardley by 2470. On the other hand, one urban and 17 rural districts have decreased in population during the same period. The birth-rate in England and Wales for 1903, 28·4 per 1000, is lower than the rate for any year on record and that for the county of Worcester is below this, being only 27·9. Last year the rate of Bromsgrove North District, the average for which during the past ten years has been 29·2, was only 26·0, and Dr. C. Kidd, the medical officer of this district, remarks that "the matter is one with which a sanitary authority has little to do directly, it being a social and moral question rather than one of public health." The districts in which the highest birth-rates have prevailed are populated chiefly by artisans. The death-rate for the year is much the lowest as yet recorded for the county of Worcester. The lowest death-rate for any district is that for Malvern, which was 9·7, and this is closely followed by King's Norton with 10·2 and Yardley with 10·8. It will be noticed that the two last-mentioned districts are those in which the increase of population is most marked, so that the decreased death-rate is doubly satisfactory. The county mortality from small-pox has been low during recent years and in 1903 only equalled 0·003 per 1000 of the population. The disease was taken by tramps into seven of the ten districts invaded, which confirms the well-known facts that small-pox is taken by tramps from district to district and that there is practically no power to control those who have been in contact with the disease, if not actually suffering from it. The annoyance caused by tramps who infest certain parts of the county during the pea-picking is great, for they are not only depraved characters but are also fertile sources of infectious disease. Last year there were no less than 32 separate outbreaks of small-pox in the county, but as the local authorities of the districts in which the disease appeared had small-pox hospitals and the officials promptly adopted suitable precautionary measures the disease was quickly stamped out. Had small-pox broken out in Lye and Woolescote or Stourbridge urban or in Halesowen rural districts, possibly this fortunate state of things might not have happened, for there is no hospital accommodation for small-pox in these districts.

Pecuniary Circumstances of Hospital Patients.

Recent negotiations between the West Bromwich Trades Council and the local hospital afford another example of the manner in which hospitals might be abused if some bodies of working men could have their way. The Trades Council in question has made complaints against the medical staff of the hospital because of what it was pleased to call the unnecessary inquiries into the circumstances of the patients made by those members of the staff whose assistance had

been sought. The reply received from the secretary of the hospital on behalf of its governing body does not seem to have satisfied the Trades Council, for at a recent meeting dissatisfaction was expressed with it and it was urged that working men who contributed so largely to the support of the institution received their tickets for medical treatment from people who were supposed to exercise their discretion in connexion with their distribution. Eventually a motion was passed expressing the hope that the distribution of tickets would in future be recognised by the hospital authorities and also that the medical men would refrain from inquiring into applicants' domestic circumstances.

Sept. 20th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Infectious Hospitals: Annual Inspection by the City Council.

THE members of the hospitals and port sanitary committee, accompanied by other members of the city council, made their annual inspection of the corporation infectious hospitals on Sept. 13th. The six hospitals visited were the City Hospital South, Parkhill Hospital, the City Hospital East, the City Hospital North, Priory-road Hospital, and Fazakerley Hospital. In the tour was also included a visit to the new hospital in course of erection at Fazakerley which is to cost over £130,000, exclusive of £38,000 paid for land. This new hospital is to be a model of construction and equipment. Prior to its commencement deputations from the committee inspected the best infectious hospitals in the country and have utilised the information gained in planning the new institution. It may have been that this new hospital would not have been deemed necessary for some years to come but for the fact that Parkhill site, on which a series of temporary buildings constitute the hospital, may be required at any time by the dock board, who are the owners, for dock extension and the corporation is liable at any time to receive notice to quit. Such an eventuality would have displaced between 300 and 400 beds, which at a time of pressure would be a grave matter for the community. The committee is therefore preparing for any emergency, appreciating the fact that the more infectious cases are isolated for treatment the less will be the danger of the spread of disease. When the new hospital is finished every requirement imposed upon the corporation in regard to the treatment of zymotic diseases will have been fulfilled and the heavy expenditure in that direction for the past few years is likely to increase for a time. The charge on behalf of the various hospitals for sinking fund, interest, and maintenance now approaches £70,000 per annum, which is regarded in some important quarters as the limit to which the city ought to be expected to go with its present population. The inspection occupied the committee ten hours. Everything possible was inspected, including many wards where fever-stricken patients were lying. All the hospitals are equipped on the most approved modern basis. The scrupulous cleanliness and cheeriness of the wards, rendered additionally pleasant by a tasteful display of choice flowers cultivated within the confines of the hospital grounds or obtained from the city parks and gardens, were greatly admired. At the end of the day the company, which numbered about 30 and included the Lord Mayor, sat down to dinner in the administrative block of the small-pox hospital at Fazakerley. Alderman Giles (the chairman of the committee) presided. Complimentary speeches were made by the chairman, the Lord Mayor, Dr. E. W. Hope (the medical officer of health), and others. Dr. Hope stated that he never recollected the city so free from infectious disease.

Hospital Saturday Fund: School Collections.

The Lord Mayor has received a letter from the secretary of the Hospital Saturday Fund respecting a suggestion which was made to the former some time ago with regard to a collection in the elementary schools in the city. The result of the appeal is most satisfactory. The teachers of Liverpool took the matter up warmly and have contributed amongst them upwards of £60, which sum has been handed over to the treasurer of the fund. The secretary hopes that the collection may become an annual source of income to the fund.

Liverpool's Death-rate and the Ship Canal: Novel Theory.

The medical officer of health reported to the health committee on Sept. 15th that the death-rate in the city was gradually decreasing. The total number of deaths registered during the week was 347, as against 378 in the previous week. The death-rate has now diminished to 24·9 per 1000, as against 37·7 three weeks ago. Mr. Isaac Turner, a member of the committee, said it was a singular and noteworthy fact that all the towns on or near the Manchester Ship Canal had been afflicted with similarly heavy rates of mortality — Liverpool, Bootle, Birkenhead, Runcorn, Manchester, Warrington, and Salford. Mr. Whitney (another member of the committee) said that the Manchester dredgers frequently discharged near Liverpool. That was decidedly a question for the corporation to take up. The medical officer of health said it would not be proper to saddle the Ship Canal with the responsibility for Liverpool's late high death-rate. The abnormal rate of mortality was not peculiar to a particular part of Lancashire; it was prevalent all over the county.

Donations to Local Charities.

The treasurer of the Royal Infirmary has received £1000 from Mrs. Barrow to endow a bed in memory of her husband, the late Mr. James Barrow. Mr. W. P. Hartley has sent £500 and Mr. Alfred Booth and Mr. Edmond Johnston £200 and £100 respectively to the treasurer of the Liverpool Country Hospital for Children.

Sept. 20th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Pauperism in Swansea.

AT a recent meeting of the Swansea board of guardians Mr. F. T. Bircham, the Poor-law inspector of the Local Government Board, animadverted upon the large number of cases of medical relief occurring within the union, which amounted last year to 2174 in a population of less than 100,000. He expressed the opinion that sufficient inquiry was not made before an order for medical attendance was given and said that many men would not perhaps consider it necessary to join a sick club or a friendly society if they could readily obtain the services of the parish medical officer when they fell ill. Where able-bodied men applied for relief for their wives in cases of confinement he advised that the relief should be given in the form of loan and the cost to the guardians subsequently recovered. Figures were placed before the guardians showing that the amount of pauperism in Swansea had increased very considerably during recent years. During the past ten years the rate of pauperism was reduced in England and Wales 12 per cent., in Wales and Monmouthshire 13 per cent., and in South Wales and Monmouthshire 7 per cent., while in Swansea there was an actual increase of 22 per cent., notwithstanding the fact that the increase in the population of Swansea was only to the extent of 5 per cent., or about a third of the increase in the other districts named.

Rhondda Health Report.

The annual report of the medical officer of health of the Rhondda urban district is always of interest, relating as it does to a locality of recent growth with an industrial population of about 120,000 persons. The birth-rate in 1903 was 40·9 per 1000, which was the average rate for 25 years past. The death-rate in 1903 was 16·7 per 1000, a lower rate than has been recorded for 20 years. The average death-rate in the ten immediately preceding years was 20·3 per 1000. Dr. J. D. Jenkins (the medical officer of health) points out that this low death-rate was to a great extent due to the meteorological conditions which prevailed during the greater part of the year and not to circumstances dependent upon the amount of attention which the council chose to bestow upon the state of its district. For some years past the Local Government Board has been urging upon the district council the desirability of increasing the staff of sanitary inspectors employed in the two valleys but the council still refuses to act upon the advice of the Board. The six inspectors who are employed are expected to act as building inspectors and to inspect the laying of all new drains in addition to the specific duties laid down by the Local Government Board. The amount of work to be done by these officials may be gathered from the statement that there are nearly 1000 workshops in the district and that last year they investigated and reported upon 1542 cases of infectious

disease and disinfected over 1200 houses. Dr. Jenkins very properly suggests that some of their duties should be undertaken by other officials. The rainfall at the head of the great valley in 1903 was 113 inches and about the middle of the same valley it was 94 inches. With a knowledge of this very large amount of rain falling in the district it is at first a little startling to read that the most pressing need of the locality is the provision of a more abundant supply of water. It appears, however, that although for the inhabitants of one portion of the two valleys there is ample water storage, amounting to 200,000,000 gallons, there is for a population of about 60,000 persons in the great valley storage equal to only 8 days' supply, even when reckoning the daily consumption at 14 gallons per head—a very small amount when it is remembered that water carriage of excreta is universally adopted in the Rhondda valleys. The district council is to be commended for having provided a refuse destructor, which, however, only destroys 16 tons out of the 200 tons of refuse which have to be dealt with each day. An enormous quantity of household refuse is deposited on "tips," many of which are quite close to dwelling-houses.

Death of Mr. Donald Fludyer Boulton, M.R.C.S. Eng., L.S.A.

Through the death of Mr. D. F. Boulton a prominent figure has been removed from the social life of the town of Usk. About three weeks ago Mr. Boulton had an apoplectic seizure to which he succumbed on Sept. 18th. He was born in the year 1842 and received his medical education at St. Bartholomew's Hospital. Soon after qualifying he joined his father in practice in Usk, where for more than 30 years he was surgeon to the prison. As a judge of horseflesh and a straight rider Mr. Boulton was well known for many miles around Usk and he had the instincts of a true sportsman. He leaves a widow and daughters.

Bristol General Hospital.

At the half-yearly board meeting of the subscribers to the Bristol General Hospital, held on Sept. 12th, the president (Mr. Proctor Baker) expressed regret that the general subscriptions did not increase but spoke in warm terms of the growing support given by the working classes. Mr. Baker added that about £1000 must be spent on improving the isolation buildings and that the committee must soon add a new wing to the institution.

Sept. 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

New General and District Hospitals, Glasgow.

THE new General Hospital situated at Stobhill and the two district hospitals at Duke-street and Oakbank, as well as the new Nurses' Home at Woodilee Asylum, Lenzie—all erected and equipped by the parish council of Glasgow and the Lunacy District Board—were formally opened on Sept. 15th. The company, consisting of about 100 gentlemen, who took part in the proceedings drove from the Parish Council Chambers to the Stobhill Hospital. There they assembled on the lawn in front of the administrative block and Mr. George Dott, chairman of the parish council, in a short speech declared the three hospitals open. He referred to the simplicity in structure of the buildings, there being no ornamentation or decoration. The policy of the council, he said, had been to get the largest accommodation with the best equipment at a minimum cost and he thought that it had succeeded. After a short dedicatory service some time was spent in inspecting the buildings. The company next drove to Woodilee Asylum and took part in a similar function in connexion with the opening of the Nurses' Home recently erected there. The aim that the parish council has had in view in erecting the general and district hospitals is to permit of the dissociation of the ordinary poorhouse cases from those requiring active hospital treatment. The buildings at Stobhill, situated to the north-east of Springburn Park, are erected for the accommodation of the infirm class of poor and also children, while the district hospitals situated in Duke-street and at Oakbank, near Garscube Toll, will be reserved for acute cases. The Stobhill Hospital provides accommodation for 1650 patients, 100 nurses, and 70 servants. Houses are also provided for 20 workmen. The site extends to 54 acres and cost £8300, while the buildings, consisting of brick with stone lintels and sills, cost £299,836. The hospital consists of the following sections:—14 medical and surgical wards, four wards for aged and infirm inmates, one isolation block, 13 children's wards, nurses' home, medical officer's house, accommodation for officials, administrative block, laundry, mortuary, and gate lodge. The Duke-street, or Eastern District, Hospital will accommodate altogether 244 patients, 133 male and 111 female. In the male section there will be beds for 72 medical cases, 25 surgical cases, and seven skin cases; in the female section there will be provision for 36 medical cases, 25 surgical cases, ten children, seven skin cases, and four maternity cases. There will be also two wards for 44 mental cases, 22 male and 22 female. In addition there are in two blocks wards for probationary and isolation cases, a well-equipped operating theatre, mortuary, post-mortem room, and pathological laboratory; also a block in which are placed the administrative department and accommodation for 30 nurses and 12 other members of the staff. Owing to the limited space at disposal the architect had to adopt the plan of having the wards radiating from a common centre, thereby gaining the maximum of air space round each block. The site covers an area of 8429 square yards, while the cost of the buildings amounted to £75,006. The Oakbank, or Western District, Hospital consists of eight blocks built in a parallel series. The ward pavilions provide accommodation for 207 patients. The administrative department occupies a convenient position in the middle of the frontage. The receiving block contains male and female wards of three beds each. The surgical pavilion of two storeys contains two wards of 17 beds each and two of four beds each, the latter for septic and aseptic cases; also a well equipped operating theatre. The medical block has 12 wards—six with 15 beds each, four with three beds each, two isolation wards with two beds each, and six side rooms with one bed each. There is also provision for maternity cases and skin cases. There is accommodation in the nurses' home, which readily communicates with the different pavilions, for 34 nurses. The site covers an area of 7196 square yards, and the buildings, which are of brick, cost £71,530.

Sept. 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Enteric Fever in Navan.

AT a meeting of the Navan urban council held on Sept. 15th a letter was read from the Local Government Board forwarding the report of its medical inspector, Mr. D. Edgar Flinn, on an outbreak of enteric fever which has recently occurred in the town. The inspector stated that during the month of August 11 cases—all confined practically to one area—had been notified. The sanitary condition of that area was unsatisfactory and the construction of a new sewer and the closure of a dangerous well were advised. It is reported that there are 14 cases at present under treatment and that three deaths have occurred.

Small-pox on the Arran Islands.

Some excitement has been caused in the city of Galway by the fact that small-pox has recently appeared on the Arran Islands situated near the mouth of Galway Bay. They are not far removed and there is daily communication between the islands and the mainland. The intercepting hospital in Galway has been renovated to prepare for any emergency. At the last weekly meeting of the Galway board of guardians Sir Acheson MacCullagh, Local Government Board inspector, requested the members present to make all arrangements possible in order to stay the spread of the disease. An old disused schoolhouse is to be transformed into a hospital and tents are being provided for nurses. The Rev. Father Farrugher, the parish priest of the island, has contracted the disease and the islanders have refused to send their children to be vaccinated by the resident medical officer who is in attendance on him. The relieving officer has telegraphed and a second medical man is about to be sent by the Local Government Board.

Rainfall in Belfast.

In the month of August rain fell on 30 days to the amount of 4·90 inches, making the total for the year 25·68 inches. The average amount for the period in question is 4·26 inches.

The Milk-supply of Belfast.

For some time past a correspondence has been going on in one of the Belfast daily newspapers on the question of the milk-supply of the city. One writer, who is evidently opposed to anything like the municipal supply of sterilised milk, recommends that in the production of milk, in its carriage, and in its distribution methods should be adopted which would eventuate in its being supplied to the householders pure and not requiring any subsequent home treatment.

Scarlet Fever in Newtownards.

At a special meeting of the urban council of Newtownards, co. Down, held in the town-hall on Sept. 17th, a report was received from Mr. David Jamison, medical officer of health, to the effect that the epidemic of scarlet fever was not abating, as 13 cases had arisen since Sept. 7th, making a total of 55 this year, as compared with 25 in 1903. Mr. Jamison recommended the closing of day schools and Sunday schools for a time and the boiling of milk. It was decided to close the schools for four weeks. There are 31 cases in hospital.

Fees of Dispensary Medical Officers.

The Local Government Board has written to the Glenties board of guardians to the effect that if the guardians do not pay Dr. F. McDonald, who is acting as locum-tenent in the place of the dispensary medical officer of Ardara, a remuneration of £3 3*s.* per week for the month the Local Government Board will feel obliged to direct payment at that rate; it also requested the guardians to reconsider the question of the remuneration of the practitioner who acted as temporary medical officer of the Killybegs dispensary district in May. The guardians decided to adhere to their original resolution on the matter to pay a lower fee, stating that they saw no reason for the interference of the Local Government Board, seeing that the medical officers were satisfied.

Small-pox in Monaghan.

At a meeting of the Monaghan rural district council on Sept. 19th a case of small-pox was reported in Dr. J. Henry's district at Drumhillagh.

Sept. 20th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A National Quarantine.

THERE is a growing belief among the more advanced sanitary authorities of this country that the old and often very impracticable State quarantine system that has existed from the foundation of the General Government must be superseded by a well organised national quarantine under the sole direction of the Public Health and Marine Hospital Service. The quarantine laws of the several States are crude and generally inefficient and at the same time incompatible with each other. Such laws are often found to be seriously and unnecessarily obstructive of commerce and travel. Another feature of the argument in favour of general laws and regulations governing quarantine and a central power managing them has lately been brought forward by the Government of the Republic of Mexico. The quarantine of the State of Texas against Mexico imposed last spring and still existing in a modified form has caused much dissatisfaction on the part of the latter Government. The State of Texas is acting within its rights and duties to protect the people from yellow fever, but it is contended that the rules which it prescribed for that purpose were altogether too restrictive. The Government of Mexico can make no appeal to our Government, for the power to make quarantine regulations for the ports of Texas are conceded by the United States to Texas. The agitation which this event is exciting tends powerfully to strengthen the position of the advocates of a national quarantine. There is a prospect of an effort to secure the enactment of a law by the next congress creating a national system of quarantine laws and placing the management of the quarantines established by such legislation under the control of the Public Health and Marine Hospital Service.

Revenue Laws affecting Physicians.

The Collector of Internal Revenue has received instructions to the effect that a practising physician who, without holding the special tax stamp of a retail dealer in liquors under the United States Internal Revenue laws, furnishes his patients with distilled spirits, wine or malt liquors, under conditions constituting sales of these liquors, directly or indirectly, involves himself in liability to criminal prosecution under these laws unless he shows that the liquors thus furnished have been compounded into medicines by the addition of some drug or medicinal ingredient. If the liquors are not so compounded into medicines by the addition of some drug he cannot sell them, even for medicinal purposes, without involving himself in special tax liability.

A National Association for the Study of Tuberculosis.

This association is formed for the purpose of making an exhaustive study of tuberculosis and the best methods of prevention. It is a culmination of the efforts that have been made during the past two or three years to combine the work of many societies in one effective organisation, fully equipped to cover the whole field of investigation. Its chief office will be in New York. There is no intention of founding any sanatorium or dispensary for the treatment of the disease. The work planned for the present is the collection and dissemination of information of every kind bearing on the disease. The association will constantly aim to encourage local authorities to adopt measures for the prevention of the spread of tuberculosis by giving them desired information and in this respect its office will be a centre of collected facts relating to every phase of the prevention of this disease. Its first work will be the preparation of a directory containing exact and minute information regarding the 125 hospitals and sanatoriums in this country and Canada now devoted to the treatment of tuberculosis.

"Bedside Notes" not Admissible in Evidence.

The Supreme Court of New York holds that what are known as "bedside notes" are not admissible in evidence. They were introduced into court during the examination of a hospital nurse who attended the plaintiff while a patient in the hospital. She described the paper as a "temperature chart" and said that such charts were used at the bedside of every patient for accuracy in recording symptoms. Its contents related chiefly to the physical condition of the patient and specified particularly the injuries from which he was suffering. The court stated that it was not aware of any rule of evidence which made such a paper, offered in such circumstances, admissible.

Pulmonary Tuberculosis among Street-sweepers.

Street-cleaning Commissioner Woodbury of New York, himself a physician, instituted an inquiry as to the prevalence of pulmonary tuberculosis in the corps of street-sweepers, with important results. Out of a total of 1872 men 283 were found to be afflicted with pulmonary complaints. Of this number only 60 had tuberculosis. The results of the investigation relieved the apprehensions of the men who became alarmed by the report of the physicians to the department who stated that more than 25 per cent. of the men applying for sick leave had tuberculosis of the lung. The low percentage of cases of tuberculosis among men who are constantly inhaling street dust in the city of New York, which on analysis has been found to contain 62 per cent. of filth of every description known in this city, was gratifying no less to the men than to the public.

Sept. 1st.

FRAUDULENT VACCINATION CERTIFICATES.—At the Old Bailey on Sept. 14th Hugh Stanley Revell, M.R.C.S. Eng., L.R.C.P. Lond., medical officer of the Wandsworth and Clapham Union, who had pleaded guilty at the June Sessions of obtaining money from the guardians by means of fictitious charges for vaccination, surrendered for judgment. The prosecution mentioned that the prisoner had defrayed the whole costs of the proceedings, and the Recorder, after mentioning that the prisoner had already been in custody for three months, passed a nominal sentence which allowed him to be discharged. The Recorder inquired whether the prisoner's name had been removed from the Medical Register and Mr. Charles Matthews, prisoner's counsel, said that the General Medical Council was not at present sitting but that there was no doubt that the name would be removed.

Obituary.

SURGEON-GENERAL JAMES JAMESON, M.D., C.B., K.H.S., LL.D.,

LATE DIRECTOR-GENERAL, ARMY MEDICAL SERVICE.

Surgeon-General Jameson was born at Kilburnie, Ayrshire, on August 15th, 1837. He graduated M.D. at the University of Glasgow in 1857 and entered the Army Medical Department in the same year, being gazetted Staff assistant surgeon on Nov. 9th. He was ordered to Canada in January, 1858, and he served for nearly 11 years in various stations of British North America, including Nova Scotia. During that period he was appointed, in 1862, assistant surgeon of the 47th (now the 1st Battalion "Loyal North Lancashire") Regiment and he followed the fortunes of that corps until his promotion. The regiment was ordered to the West Indies in December, 1868, and it was Assistant Surgeon Jameson's lot to proceed to Trinidad in medical charge of a detachment. Here, in 1869, he made acquaintance with tropical disease of virulent form—he had an opportunity, of which he availed himself, of showing his zeal, energy, and assiduity in the performance of his professional duties and he was rewarded by special promotion to the rank of staff surgeon "in consideration of his highly meritorious services during the epidemic of yellow fever at Trinidad." This promotion removed him from the regiment, in which he was a great favourite of both officers and men. Returning to England in May, 1870, he remained at home but a few weeks when he volunteered for service with the English ambulance in France during the Franco-Prussian war and he commanded a division thereof during 1870-71. It so happened that most of his time was spent in the company of the Prussian invading forces and not very long before the close of his service as Director-General he received the Emperor William commemoration war medal, by special act of grace conferred upon him by the German Emperor. At the conclusion of the war Staff Surgeon Jameson proceeded to the Bahamas where he served until 1875. Returning home for four or five years his next foreign service was in India, the Madras Presidency, where he remained from 1881 to 1886. During a portion of this time he was in medical charge of the 12th Lancers. We have received from a former officer of that regiment an appreciation which may well be given in his own words:—

"Poor Jameson was in medical charge of the 12th Lancers from their arrival in Bangalore in 1882 and was the first *non-regimental* medical officer that we had to do with. We very soon learned to appreciate his value. Professionally and socially he was found to be admirable, and among all ranks and among the families of officers, non-commissioned officers, and men, he was recognised as a true friend. He was infinitely kind and attentive, never sparing himself in any way when he could be of service to anyone. It was of enormous importance to us all to feel that we had at hand a medical adviser so tender in his ways and in whom we had such complete confidence. And he was always the best and most genial of comrades; an excellent sportsman—full of sympathy with every manly pursuit. He was everything that a man in his position should be—respected, loved, and implicitly trusted."

He attained the rank of Deputy Surgeon-General (subsequently changed to "Surgeon-Colonel") in September, 1888, his first service in an administrative capacity being as principal medical officer on the staff of General Lord Frankfort in Egypt, during the years 1889 to 1893, where, in the words of the general, "he rendered excellent service."

In 1893 he was promoted Surgeon-Major-General and became "personal assistant" (the post being that now known as Deputy Director-General) to the then head of the department, Sir William MacKinnon, K.C.B., whom he eventually succeeded on May 7th, 1896. He received a meritorious service reward in October, 1896, was decorated C.B. in 1897, and in the same year was appointed honorary surgeon to Queen Victoria.

Then came the "troublous times" of the Boer war. As head of the Army Medical Service he was responsible for the medical and sanitary arrangements of a campaign which attained dimensions far beyond the calculations of everyone—including those supposed to be "in the know." It must be in the recollection of all that a Royal Commission was appointed to make inquiry and to report upon the "Care and Treatment of the Sick and Wounded." The opinion of that Royal Commission was "that in no campaign have the sick and wounded been so well looked after as they have in this." Bearing in mind that at the outbreak of the war the establishment of the Royal Army Medical Corps was not even equal to peace requirements (it was "practically exhausted in supplying the First Army Corps and in manning the base hospitals") the sudden and long-continued "expansion" which became necessary was no easy matter. But Director-General Jameson "tackled" the difficulties with characteristic energy, and the verdict of the tribunal was one in which he was entitled to feel legitimate pride.

It is impossible for us to account for the fact that his strenuous efforts received no official recognition. There must have been some extraordinary misunderstanding or misconception of the character of the man who worked so loyally for his Sovereign and for the good of the service. Not only was his name absent from the Honours Lists, but he was requested to retire from his post after the completion of five years' tenure, it being understood that it was to be held by him for seven years (for a rule recently promulgated was not supposed to apply to him, but to his successors). For this premature dismissal no very satisfactory reason was forthcoming, the only plausible explanation being that reorganisation and reconstruction of the medical service were "in the air" and the authorities wished for "a new broom." This would have been better understood had the enforced retirement been carried out generously and gracefully, but the omission of all recognition came as a grievous disappointment, not only to the corps of which he was the popular chief, but to the whole body of the medical profession—to say nothing of his friends. The profession, however, hastened to do him honour by inviting him to a complimentary banquet on July 24th, 1901, which was presided over by Sir William Church, Bart., President of the Royal College of Physicians of London (who, it will be remembered, was a member of the Royal Commission).[1] He also received honorary degrees from three or four universities. It should not be forgotten that it was during his term of office that the Army Medical Department was converted into the "Royal Army Medical Corps" and substantive rank was introduced. As regards his personal character he was conspicuous for his loyalty to his officers and profession. Those who worked with him were struck with his thorough honesty, his generous confidence in all who served under him, and his ability to take a sound, commonsense view of any question which had to be considered. He had a keen sense of humour withal and was always "excellent company."

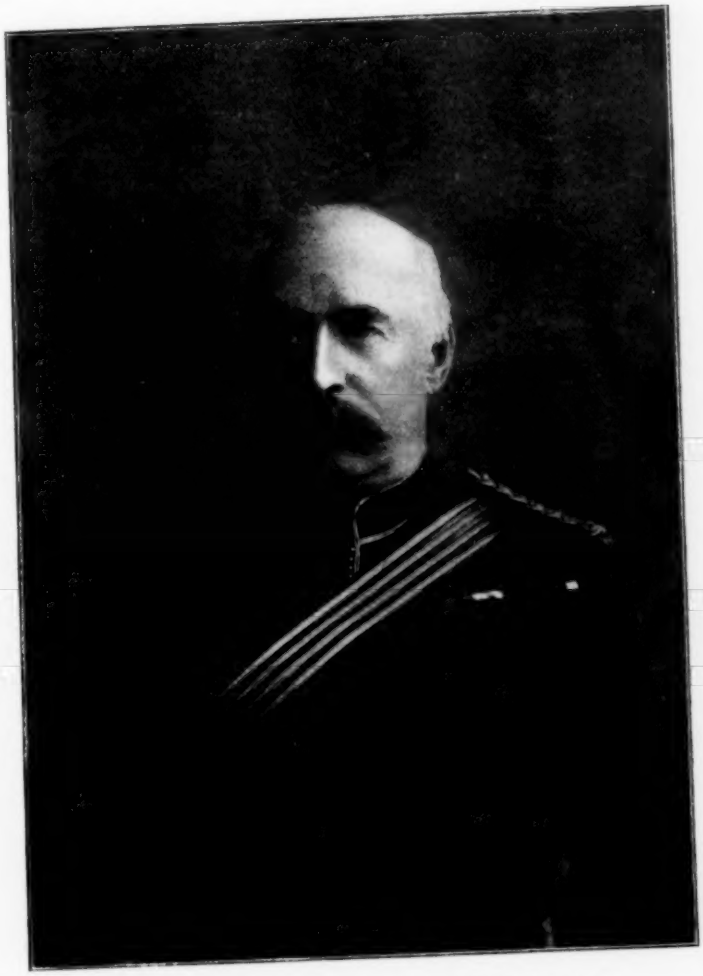
Surgeon-General Jameson married in 1864 a daughter of the Rev. R. W. Cartwright of Kingston, Ontario, who survives him, together with five sons and one daughter. Four of his sons are medical men, one being in the Royal Navy, two in the Royal Army Medical Corps, and one in private practice. The announcement of his death came as a shock to all who knew him, for he always appeared to be the embodiment of sound health and vigour. He had quite recently been to Norway on a fishing expedition and apparently he must have overtaxed his strength by fatigue and exposure. Shortly after his return he had an attack of thrombosis in both extremities and just when recovery was confidently expected embolism supervened followed by septic pneumonia. Death occurred at his house at Eltham on Sept. 13th. The funeral took place on Sept. 17th at Greenwich cemetery and was largely attended by relatives and friends, amongst whom were some of his old comrades of the 47th Regiment. The Director-General was represented by Surgeon-General A. H. Keogh, C.B., Deputy Director-General (Sir William Taylor being absent in South Africa), and his staff at the army medical office, and there were present several officers on the retired list as well as many now serving in the Royal Army Medical Corps. There was also a strong company of the Royal Army Medical Corps from the Herbert Hospital. The coffin was borne on a gun carriage provided by the Royal Horse Artillery who also furnished the firing party.

WILLIAM LEE DICKINSON, M.D. CANTAB., F.R.C.P. LOND.,

SENIOR ASSISTANT PHYSICIAN TO ST. GEORGE'S HOSPITAL.

A GREAT calamity has fallen on St. George's Hospital and School by the sudden death of Dr. Lee Dickinson, senior assistant physician, at the early age of 40 years. The closing

[1] A report of the proceedings at this dinner appeared in THE LANCET of July 27th, 1901, p. 247.



SURGEON-GENERAL JAMES JAMESON, M.D., C.B., K.H.S., LL.D.

of a career which had performed so much good work for St. George's and which promised so much more for medical science and for the public service must not be allowed to pass without some attempt to show how Dickinson was regarded by his friends and colleagues. To the general public he was, perhaps, less known than men of his age usually are, for he was of a most retiring disposition. Yet he had done enough to show what there was in him and he was well known at the various societies as one of the most rising of our younger physicians and pathologists. Dr. Lee Dickinson was the son of Dr. W. H. Dickinson and the grandson of Dr. James Arthur Wilson, once well known as physician to St. George's Hospital. His education, both general and professional, was received at Winchester, at Caius College, Cambridge, and at St. George's Hospital. He took the diplomas of M.R.C.S. Eng. and of M.R.C.P. Lond. in 1886 and 1889 respectively and in 1894 he was elected F.R.C.P. Lond. In 1890 he took his degree of M.B. at Cambridge, proceeding to M.D. in 1893.

At an early period in his career he joined the medical staff of the school of St. George's Hospital, of which his father is so distinguished a member. He also held for five years the position of assistant physician to the Hospital for Sick Children in Great Ormond-street, resigning it when in February, 1894, he became assistant physician to St. George's Hospital with the unanimous support of the whole staff. He worked hard at the school and was looked on as one of the most valuable members of the teaching body; nor would he ever spare himself from duty, though he soon began to show symptoms of the complaint which has so early laid him low. He became lecturer on medical jurisprudence and toxicology and much of his work was connected with the latter subject. He was the author, or joint author, of several papers of value in the Proceedings of the Royal Society and the Transactions of the Clinical Society. He was a successful lecturer and much esteemed as a clinical teacher. He was much thought of by his poor out-patients, to whom he was remarkably kind and considerate. As definite proofs of tuberculous mischief became evident he found himself obliged to request a change of climate and a period of repose. Accordingly he obtained from the board of governors leave of absence for half a year and repaired to South Africa in the year 1898, where he lived in the neighbourhood of Harrismith with so great benefit to his health that many of his friends wished him to settle in that country. But although he must have well known what he was doing, he deliberately chose to face the risk rather than to give up his connexion with the hospital which he loved and his prospects of distinction in the practice of the art which he loved still more. At first his resolution seemed to be justified. His health improved and he was able to discharge his duties both at St. George's and at the branch hospital at Wimbledon with the exact punctuality which seemed a part of his nature. He was, indeed, the very model of a hospital physician, skilful in diagnosis, ready in practice, lucid in teaching, kind and good to the patients, unselfish in his devotion to duty, and by his fine powers of observation fitted to carry on the practice of his art to yet higher perfection.

> "But the fair guerdon when we hope to find,
> And think to burst out into sudden blaze,
> Comes the blind Fury with th' abhorred shears,
> And slits the thin-spun life."

So was it with him. His friends had lately remarked that he seemed to grow more haggard and distressed but he made light of any foreboding and protested that he was well. Indeed, he seemed to become stronger and better at his father's house at Tintagel in Cornwall, until on Sept. 6th, without any warning, a sudden and overwhelming fit of hæmoptysis carried him off in a few minutes.

So died a man of whom it may be truly said that no one knew how good he was, since he had not had the opportunity to show it. It is not necessary here even to allude to the household virtues of the deceased. His death will long be mourned by his family and his many friends.

SAMUEL JOHN HUTCHINSON, M.R.C.S. ENG., L.D.S.

WE regret to announce the death on Sept. 15th, at the age of 56 years, of Mr. Samuel John Hutchinson. He came of an old Quaker family and was born at Helmsley in Yorkshire. His early education was obtained at a local school and he subsequently came to London to study medicine and pursued his studies at University and King's College Hospitals and the Royal Dental Hospital. In 1872 he obtained the diploma of Licentiate of Dental Surgery of the Royal College of Surgeons of England and two years subsequently he became a Member of that College. He practised dental surgery and during his whole career took a keen interest in all that appertained to the advancement and welfare of that branch of medicine. At the Royal Dental Hospital, where he was one of the early students, he held the position of assistant surgeon and surgeon for 11 years, resigning his appointment on being elected to the lectureship on dental surgery and pathology—a post that he resigned on his appointment as examiner in dental surgery to the Royal College of Surgeons of England. He was at the time of his death consulting dental surgeon to the National Dental Hospital and University College Hospital. He took an active part in the work of the Odontological Society of Great Britain and held in succession the offices of honorary secretary, curator, president, and treasurer. To the British Dental Association he devoted much of his spare time and held for several years the office of president of the representative board. He occupied the office of president of the association when the annual general meeting was held in London in 1901. At the time of his death he was one of the trustees of the Benevolent Fund. His life was in all respects an active one and it is possible that the strain of a busy practice combined with his many other duties may have told severely on his health. He died at his residence, "Ford," Branksome Park, Bournemouth, and was buried on Sept. 20th at Hampstead cemetery.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Anton Drasche, extraordinary professor of medicine in Vienna and editor of the great "Bibliothek der gesamten Medicinischen Wissenschaften."—Dr. Hygino de Sousa, assistant professor of ophthalmology in the Lisbon Faculty of Medicine.—Dr. Albert Landerer, surgeon to the Schönberg Hospital, Berlin, and until recently chief surgeon to the Karl-Olga Hospital, Stuttgart.—Dr. Franz Riegel, professor of medicine in Giessen and one of the most able clinical physician in Germany. His name is specially associated with the recognition of the importance of the determination of hydrochloric acid in cancer of the stomach.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. R. Lambranzi has been recognised as *privat-docent* of Psychiatry and Dr. Rosario Traina as *privat-docent* of Pathological Anatomy.—*Giessen:* Dr. Hermann Kössel, a younger brother of Professor Albrecht Kössel of Heidelberg, on whom the University of Cambridge has just conferred an honorary degree, has been appointed to the chair of Hygiene, succeeding Dr. Gaffky.—*Gratz:* Dr. Rudolf Müller has been recognised as *privat-docent* of Pharmacology and Pharmacognosis and Dr. Albert Blaschek as *privat-docent* of Ophthalmology.—*Leyden:* Dr. E. C. van Leersum of Amsterdam has been appointed Professor of Materia Medica and Pharmacology.—*Naples:* Dr. Arnaldo Angelucci of Palermo has been appointed Professor of Ophthalmology in succession to the late Dr. de Vincentiis.—*New York (College of Physicians and Surgeons):* Dr. Janus R. Hayden has been appointed Professor of Diseases of the Urinary System in succession to Dr. Robert W. Taylor resigned.—*Padua:* Dr. Giuseppe N. Sterzi has been recognised as *privat-docent* of Anatomy, Dr. Rodolfo Schwarz as *privat-docent* of Operative Medicine, and Dr. Saverio Spangaro as *privat-docent* of External Pathology.—*Pavia:* Dr. Adriano Valenti has been recognised as *privat-docent* of Materia Medica and Pharmacology.—*Pisa:* Dr. Giuseppe Cardi has been recognised as *privat-docent* of Internal Pathology and Dr. Giulio Anzilotti and Dr. Fernando Fabrini as *privat-docenten* of External Pathology; also Dr. Francesco Pardi as *privat-docent* of Anatomy.—*Prague (Bohemian University):* Dr. L. Syllaba and Dr. A. Vesely, *privat-docenten* of Internal Medicine, have been granted the rank of Extraordinary Professors.—*Rome:* Dr. D. de Blasi has been recognised as *privat-docent* of Bacteriology.

DARLINGTON HOSPITAL AND DISPENSARY.—The committee of the above has received an intimation from Sir Theodore Fry that Mr. Andrew Carnegie has promised to give at least £1000, required for the extension of the hospital buildings now almost completed. £6579 have been received for this special object in three years, and to place the committee in the position to claim Mr. Carnegie's offer it will be necessary to raise a further sum of at least £5000.

A LONG-DESERVED PUNISHMENT.—On Sept 14th Thomas Fisher, a butcher of Norwich, was sentenced at Clerkenwell police-court to six months' imprisonment for sending to Smithfield the carcass of a bullock which had died from tuberculosis. The offence had been committed two years ago, since when the prisoner had been in America. This is a notable example of the truth of

> Raro antecedentem scelestum
> Deseruit pede Poena claudo.

SMALL-POX AND VACCINATION.—A very severe epidemic of small-pox has lately been in progress at Dewsbury, the number of cases under treatment on Sept. 12th amounting to over 100. Since February about 300 cases have been admitted to the isolation hospital but some of these came from outside the borough. Many persons previously opposed to vaccination have submitted themselves to this simple operation, but in spite of medical advice the Northern Union Football League decided that the match, Dewsbury *versus* Leeds, should be played.

TREPHINING AND CRIME.—A Laffan telegram from Indianapolis dated Sept. 14th states that on May 7th an order was passed by the Juvenile Court permitting an operation to be performed upon an incorrigibly criminal boy, aged 15 years, whose mother stated that he had injured his head 12 years previously. A portion of the skull cap was found to be depressed and the bone was trephined. It was found to be thickened and to be pressing on the brain. The boy rapidly recovered and his mental and moral condition steadily improved. On Sept. 14th he entered the high school.

WATER AND THE SALE OF MILK.—A curious resolution was on the minutes of the sanitary committee of the Heaton Norris urban council at the meeting on Sept. 15th. The clerk was instructed to write to an estate agent to inform him "that unless a proper supply of water be provided to the farm premises within 14 days the tenant will be prosecuted for selling milk without being registered for the purpose." A good supply of clean water is, of course, necessary in any dairy farm for the cleansing of the cans and other vessels used, but the wording of the resolution is ambiguous.

SMALL-POX IN A WORKHOUSE.—A serious outbreak of small-pox has occurred in Ashton workhouse. Nine cases were reported there last week. Relieving officers have been instructed not to send paupers into the workhouse unless absolutely necessary. At a meeting of the board of guardians on Sept. 15th it was suggested that the source of infection was the borough small-pox hospital, "which was built right on the boundary of the workhouse," and that it should at once be removed. The workhouse committee was instructed to make an investigation. There is no mention of revaccination being carried out. The constant occurrence of these outbreaks of small-pox is not creditable to the country. It causes a large increase in the rates but probably that fact does not influence the faddists.

COLNE AND HOLME JOINT ISOLATION HOSPITALS.—The new isolation hospital of the Colne and Holme joint hospital district committee was opened recently by Mrs. Mallinson, wife of Mr. Thomas Mallinson, J.P., chairman of the committee, at Meltham Moor, near Meltham, about five miles from Huddersfield. The hospital district comprises 13 townships of the Colne and Holme valleys. The new hospital is for all infectious diseases except small-pox, for which provision had previously been made at Moor Top, Meltham. The total area of the land acquired for the site was 19 acres, of which about seven acres have been used for the hospital. The purchase price was £817 10*s.* and the entire cost of the hospital, including the site, amounts to about £19,000, which has been borrowed at 3½ per cent. The scheme was sanctioned by the West Riding County Council and the Local Government Board in March, 1902. The buildings comprise a porter's lodge, administrative block, isolation block, with two pavilions for scarlet fever patients and typhoid fever pavilion, and a laundry block. In all cases the standard of space fixed by the Local Government Board has been complied with and all the buildings have a south-eastern aspect. Mr. Joseph Berry of Huddersfield was the architect. A good supply of water has been obtained and is estimated at 4000 gallons a day and a reservoir has been constructed with a capacity of about 25,000 gallons. Mr. W. Crowther, J.P., who presided at the opening proceedings, said that the population of the two valleys was estimated in 1901 at 54,100 persons, the rateable value was £190,000, and 1*d.* in the £ produced £800. They had been assured that a rate of 2*d.* in the £ would suffice for the scheme, but it had already got to 4*d.*, and that without doing much actual hospital work.

DONATIONS AND BEQUESTS.—By the will of Mrs. E. Peacock of Eccles £1000 have been left to the Hospital for Sick Children, Pendlebury, Manchester, to endow a cot, and £400 to the Home for Crippled Children, Manchester, for a similar purpose. The testatrix has also bequeathed £500 to St. Mary's Hospital, Manchester; £1000 to the Cancer Pavilion and Home, Manchester, to endow a cot; £500 to the Northern Counties Hospital for Incurables; and £1000 upon trust to pay the income to a niece for life and after her death to pay such sum to the Salford and Pendleton Hospital and Dispensary.—The Royal Berkshire Hospital, the Surrey County Hospital (Guildford), the Aldershot Hospital, the Alton Cottage Hospital, and the Basingstoke Cottage Hospital will each receive £1000 under the will of Mr. G. McDonald of Farnham.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

DANIELL, G. W. BAMPFYLDE, M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Edinburgh Dental Hospital.

FELTON, WALTER B., L.R.C.P.I., L.R.C.S.I., has been appointed Medical Officer and Public Vaccinator for the Newlyn East District by the St. Columb (Cornwall) Board of Guardians.

HICHENS, F., M.D. Lond., M.R.C.S., has been re-appointed Medical Officer of Health for the Redruth (Cornwall) Urban District for three years.

JOHNSON, W. CROSBY, M.B., Ch.B. Vict., has been appointed Honorary Physician to the Pendleton Branch Dispensary of Salford Royal Hospital.

MACLENNAN, JOHN NORMAN EMSLIE, M.B., Ch.M. Aberd., has been appointed Government Medical Officer and Vaccinator at Young, New South Wales, Australia.

MCDONALD, JAMES EDWARD FANCOURT, M.B., B.S. Melb., has been appointed Acting Assistant Health Officer for the port of Brisbane, Queensland, Australia, and an Acting Health Officer.

O'BRIEN, RICHARD ALFRED, M.B., B.S. Melb., has been appointed Health Officer and Medical Officer at Cairns, Queensland, Australia, Visiting Surgeon of the Prison at that place, and a Health Officer.

ROGGER, T. R., M.B., B.S. Glasg., has been appointed Certifying Surgeon under the Factory Act for the Sanquhar District of the county of Dumfries.

ROSS, GORDON, M.B., B.S. Melb., has been appointed Resident Medical Officer at the Brisbane Hospital, Queensland, Australia.

SIMPSON, THOMAS YOUNG, M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon at the Royal Albert Hospital, Devonport.

STYLE, F. W., M.R.C.S., L.R.C.P. Lond., has been appointed by the Postmaster-General Medical Officer for the Brent (Devon) and District Postal Staff.

WOOD, G. BUNINGTON, M.B., C.M. Edin., has been appointed Medical Officer to the Post Office and Medical Examiner to the Board of Education, Sandown, Isle of Wight.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM, ASTON UNION WORKHOUSE AND COTTAGE HOMES, Gravelly Hill.—Resident Assistant Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Second Assistant Anæsthetist.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £50 per year, with board, apartments, and laundress.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House Physician for six months. Salary at rate of £30 per annum, with board, washing, and residence.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer, unmarried. Salary £80, with board.

GORDON HOSPITAL FOR FISTULA, &c., Vauxhall Bridge-road, S.W.—House Surgeon. Honorarium £15 15s. for six months, or £40 for twelve months, with board and residence.

HALIFAX (ROYAL) INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HULL ROYAL INFIRMARY.—House Surgeon, unmarried. Salary 80 guineas per annum, with board and apartments.

KENSINGTON WORKHOUSE AND INFIRMARY.—Second Assistant Resident Medical Officer. Salary £80 per annum, with apartments, board, and washing.

KIRKBURTON, NEAR HUDDERSFIELD (STORTHES HALL ASYLUM).—Assistant Medical Officer. Salary £140 per annum, with rooms, board, attendance, and washing.

LEICESTER INFIRMARY.—Assistant House Surgeon. Salary £80 per annum, with board, apartments, and washing.

LINCOLN COUNTY HOSPITAL.—Junior Male House Surgeon for six months. Honorarium of £25, with board, residence, and washing.

MANCHESTER, ANCOATS HOSPITAL.—Resident House Physician. Salary £80, with board, residence, &c.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Physician and Junior Surgeon. Honorarium £50 each.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham-hill-road.—House Surgeon. Salary £80 per annum, with apartments and board. Also Honorary Assistant Physician.

NEWCASTLE-UPON-TYNE CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer. Salary £100 per annum, rising to £150, with board, lodging, &c.

NORFOLK AND NORWICH HOSPITAL.—Surgeon and Assistant Surgeon.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, attendance, and washing.

PADDINGTON INFIRMARY.—Clinical Assistant and Second Assistant to the Medical Superintendent, unmarried, for six months. Honorarium £36, with board, lodging, and washing.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £60 per annum, with board, washing, &c.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130, rising to £150, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ST. ANN'S DISPENSARY, South Tottenham.—Medical Assistant. Salary £50 per annum and extras.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Clinical Assistants.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—Junior Resident Medical Officer, Dreadnought Hospital, Greenwich. Salary £40 per annum, with board, residence, and washing. Also House Surgeon, Branch Hospital, Royal Victoria and Albert Docks, E. Salary £50 per annum, with board, residence, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Officer in X-Ray Department.

Births, Marriages, and Deaths.

BIRTHS.

BAKER.—On Sept. 13th, at Hayes-road, Bromley, Kent, the wife of A. Ernest Baker, L.D.S., M.R.C.S., L.R.C.P., of a son.

BLOMFIELD.—On Sept. 12th, at Horsefair, Pontefract, Yorks, the wife of George Wills Blomfield, M.D., of a son.

ECCLES.—On Sunday, Sept. 18th, at 124, Harley-street, W., the wife of W. McAdam Eccles, M.S., F.R.C.S., of a son.

MATHEW.—At Port Elizabeth, Cape Colony, on the 30th August, 1904, the wife of G. Porter Mathew, M.D. Camb., of a son.

WILLIAMS.—On Sept. 19th, at 9, Whatley-road, Clifton, Bristol, the wife of E. Cecil Williams, M.B. Cantab., of a daughter.

MARRIAGES.

BARNES—ORMSBY.—On Sept. 13th, at North-street church, Brighton, J. A. Percival Barnes, to Louisa Eileen, elder daughter of Thomas Ormsby, Esq., solicitor, of Beaumont, Blackrock, co. Dublin.

OSBORN—WHITEHOUSE.—On the 7th inst., at the Cathedral, Singapore, Straits Settlements, Major George Osborn, Royal Artillery, eldest son of Ashby G. Osborn, Esq., M.R.C.S. Eng., L.S.A., of Dover, to Alice May, third daughter of Benjamin Whitehouse, Esq., J.P., of Seigeley, Staffordshire.

TURNER—HAMILTON.—On Sept. 14th, 1904, at the parish church, Tavistock, Devon, by the Rev. Alfred Woodin, rector of Broughton, Hampshire, assisted by the Rev. H. G. Le Neven, vicar of Tavistock, William Turner, M.S. Lond., F.R.C.S., of 53, Queen Anne-street, Cavendish-square, London, to Lily, only daughter of John Kerr Hamilton, of St. Rumon's, Tavistock.

DEATH.

BRANDT.—On the 19th September, at Royat (Puy de Dome), Annie, wife of Dr. G. H. Brandt, after a very short illness.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE PAYMENT OF MEDICAL CERTIFICATES FOR ELEMENTARY SCHOOLS.

AT a recent meeting of the Northants education committee among other business a discussion took place about the payment of medical certificates. The following is the report of the proceedings given by the *Northampton Daily Chronicle* of Sept. 17th:—

> The elementary education committee reported the receipt of a resolution passed by the South Midland branch of the British Medical Association expressing the opinion that all medical certificates in cases where children are stated to be unfit to attend school should be paid for by the education authority; and also a communication on the same subject from the managers of the Wellingborough council schools. The present practice is to require the parent to prove that his child is unable to attend school. The committee were of opinion that this was a question of great importance and as such should be decided by the education committee.—Mr. Allebone moved that the medical certificates be not paid for by the committee. When tried at Earls Barton the number of certificates grew to such an extent and the expense became so large that ultimately that authority ceased to do so.—Mr. Rennie Wilkinson seconded.—The Chairman said almost all authorities required the parents to supply the medical certificates.—After further discussion it was decided to forward to the bodies who had forwarded resolutions on the subject copy of the resolution passed by the committee in March, requiring the parents to prove that the child is unable to attend, and stating that the committee saw no reason to vary their previous decision.

The question as to who should pay the medical man for giving a medical certificate concerning a child who is of school age has been many times debated and is a somewhat difficult one to answer. In our opinion the case stands thus. No medical man should be expected to spend his time, his skill, and his trouble in examining children and in giving a medical certificate as to their case without payment. The State compels all children of a certain age to attend school. The expenses of education are now for the most part borne by the ratepayers who are compelled by the State to contribute towards the expenses of education. It is manifestly to the advantage of the ratepayers that the health of children attending school should be looked after and as the State compels parents to send their children to school and compels the ratepayers of any given district to provide the necessary funds for education it seems to us that it is the duty of the State to see that the medical men by whose efforts epidemics may be frustrated should be paid and the persons who ought to pay them are manifestly not the parents of the children in particular but the ratepayers as a body. The question whether the money should be found by an increased rate or by a Government grant—that is to say, whether the money should come out of the taxes or out of the rates—does not seem important. On the whole, we think it would be fairer that the money should be paid by the taxes, for in that case the expenses would be more equally distributed over the whole country; but if the parents are made to pay it is most probable that in the majority of cases the medical man would get no fee at all, for the poorer that the parents are the more ill-nourished are their children and the more likely to be ill and so in the majority of cases the medical certificate would be desired by a person who could not pay even if he would.

PASTOR HOWTON AND DEMONIACAL POSSESSION.

THE *Morning Leader* of Sept. 7th contains an article "From Our Special Correspondent" which is headed "A Demon Hospital." It discusses what it calls the wonderful cures of Pastor Howton of Glossop and a portion of the article runs as follows:—

> There is to-day a boy in the Home who is a living testimony to the Pastor's almost uncanny system of "divine healing." This boy, whose name is Wycliffe ——, was taken on April 25th last to Dr. A—— of John-street, Manchester, who is a specialist in the diseases of children. Here is Pastor Howton's report of the case: "In the presence of myself and my wife and his father and mother this lad was very carefully examined by Dr. A——. He reported that the child was suffering from paralysis even to the root of the tongue. His spine was dead half way up. All the food he could take was in liquid form. He had 24 fits in 14 hours. The doctor said he would not live a month, and if he did, he would be a complete idiot. Well, I took him home and on Good Friday morning the boy had a number of fits, the Satanic power rending him terribly. God said to me, 'Go upstairs and claim life for this boy!' I obeyed the voice, and I will show the result!" The pastor opened the door and shouted "Wycliffe!" A cheerful little voice answered the call and in another moment Wycliffe was in the room—a well set-up boy of nine, with a clear eye and quite a healthy intelligence.

We were struck upon reading this report by certain discrepancies and we accordingly wrote to Dr. Henry Ashby of 13, John-street,

Manchester, asking him whether he was the Dr. A. referred to. He replied as follows:—

> Clearly I am the Dr. A. referred to. On looking over my notes I find I saw at this address on April 25th, 1904, a boy, named Wycliffe ——, aged eight years. He was brought by his father without appointment. The father stated that he lived near Blackpool, but they were staying at present at Glossop with a minister and his wife who had taken a great interest in the boy. The minister was introduced and also his wife. They were complete strangers to me. ..... The boy was carried into my room by his father. He could not sit up and his head flopped over unless supported; he seemed half dazed and the saliva dribbled from his mouth. He answered questions with a slow nasal voice. He was in a very neurotic state, starting at sounds, and the knee-jerks were exaggerated. ..... I told the father he was in a serious state and that he ought to place him under a local medical man to whom I would write. Finding they were not intending to follow my advice, we promptly parted and I heard no more till the cutting sent reminded me of the case. ..... The boy was clearly epileptic. ..... I did not feel absolutely certain as to the absence of organic disease of the brain and was inclined to believe he was an epileptic with mental degeneration.

Dr. Ashby then calls attention to a point which we had already noticed—namely, that he is reported to have seen the boy on April 25th, which he himself allows is the case, and that the pastor is reported as saying that he cured the boy on Good Friday. Now Good Friday of this year was April 1st. The *Morning Leader* of Sept. 12th has another article giving an account of an interview granted to a *Leader* representative by Pastor Howton. In this interview Pastor Howton is made to say:

> I have come to the conclusion Christ has gone to heaven to represent my perfect humanity and has left me here to represent His divinity by healing the sick and casting out devils.

The interviewer asked whether the pastor had any patients in the Home at present and the pastor is reported as saying:

> Yes, there is the lad Wycliffe ——, the son of a well-known cotton manufacturer, who was given up by several doctors and a specialist of Manchester, who said that half his body was dead. He was brought to me on July 2nd and God healed him.

This remarkable story, as will be seen, is full of discrepancies. Dr. Ashby confirms the statement that he saw the boy on April 25th. In the cutting from the *Morning Leader* of Sept. 7th Pastor Howton is made to say that he cured the boy on Good Friday—i.e., April 1st. In the cutting from the same journal of Sept. 12th he is made to say that the boy was not brought to him until July 2nd. Now, if the first statement is true, that he cured the boy on Good Friday, the cure did not last long or else why did the parents of the child take him to see Dr. Ashby on April 25th? If, on the other hand, the boy did not go to Pastor Howton until July 2nd it is curious that the pastor, having been told by Dr. Ashby on April 25th that the boy was very ill, should not have cured him by means of the wonderful powers which he alleges he possesses until July 2nd. We think that Pastor Howton and the *Morning Leader* owe the public an explanation as to whether these very divergent statements can be reconciled. When they have done this it will be time to comment upon the medical aspects of the case.

COCKADES.

To the Editors of THE LANCET.

SIRS,—In reference to your reply to a correspondent in THE LANCET of Sept. 17th cockades should only be worn by servants of officers of the navy and army and those holding commissioned offices under the Sovereign, including justices of the peace and deputy lieutenants.

I am, Sirs, yours faithfully,

Sept. 17th, 1904. MEDICUS.

THE ABERDARE VALLEY COLLIERY SURGEONS' ASSOCIATION *versus* THE ABERAMAN AND DISTRICT WORKMEN'S DOCTORS' FUND.

IN THE LANCET of Sept. 3rd a notice in the following terms was inserted at p. 147 of the advertising columns:—

> WARNING.—All applicants for the post of medical officer to the Aberaman District Workmen's Doctors' Fund will greatly benefit by first communicating with the Hon. Sec., Aberdare Valley Colliery Surgeons' Association, Ty-Mawr, Aberdare, Glamorgan.

We have now received from the Aberaman and District Workmen's Doctors' Fund a long printed circular, signed on behalf of the Fund by Mr. John Watkins and three others. The above advertisement is printed in full at the top of this circular, which, however, is almost entirely devoted to hostile criticism of "a letter issued by the Secretary of the Aberdare Valley Colliery Surgeons' Association." This letter is not given at length in the circular but some passages are quoted from it and commented on, a method of confuting an opponent which seldom carries much "weight outside the group immediately interested. The criticisms, moreover, are not very scathing. The circular mentions that the workmen's fund received 77 applications in response to advertisements in which medical officers were offered £400 per annum, with house, coal, and some other emoluments.

A LARGE INFANT.

To the Editors of THE LANCET.

SIRS,—I was called to attend a woman in her third confinement. Previous confinements had been normal. I delivered her with forceps of a living male child. The child was weighed the next day, the weight being exactly 13 pounds. As children of this weight are exceedingly rare I think the case of some interest. The mother and child are doing well.

I am, Sirs, yours faithfully,

Sept. 16th, 1904. R. E. W. JENNINGS, M.R.C.S. Eng., L.R.C.P. Lond.

*** Well-authenticated instances of children weighing at birth as much as 13 pounds are of extreme rarity. Amongst 15,186 children born in Chrobak's clinic in Vienna only one weighed 5300 grammes (11½ pounds); while in seven years at the Clinic Baudelocque in Paris there were only six children who exceeded 5000 grammes (11 pounds) at birth, the largest weighing 6150 grammes (13½ pounds). Dubois in 1897 collected 28 cases from the literature in which the child weighed more than 5600 grammes (12 pounds) at birth and stated that the heaviest children on record weighed respectively 24 pounds 3 ounces, 24 pounds 2 ounces, and 23 pounds 12 ounces.—ED. L.

A NEW ONE-TWELFTH INCH OBJECTIVE.

IN THE LANCET of Sept. 17th we mentioned that we had received for trial from Mr. Henry Gowlland a one-twelfth inch oil immersion lens. In our notice of this lens we said that, in our opinion, it had one defect which we thought might be remedied, and that was that, owing to a projecting milled collar, we considered that the adjustment of the lens might be disturbed when the whole objective was unscrewed from the nose-piece. We have now, however, received from Mr. Gowlland the brass mounting of the lenses so that we have been enabled to take it to pieces and to see how the lenses are fitted. From this it is plain the lenses being fitted into a tube which is altogether distinct from that part of the mounting which carries the collar to which we alluded, that even if this collar were unscrewed it would have no effect upon the relative position of the lenses the one to the other. As this was the only point in the mounting to which we were able to take exception we can now unreservedly praise an admirable objective.

A QUERY.

To the Editors of THE LANCET.

SIRS,—I should be greatly obliged if any of your readers would kindly inform me through the medium of THE LANCET where a good account of Professor von Schroen's discoveries is to be found and whether his statements have been verified by any authority in this country.

I am, Sirs, yours faithfully,

Sept. 20th, 1904. BACILLUS.

A DUBIOUS PUBLIC ADVANTAGE.

THE Russian Medical Council has expressed the opinion that the notice in the Government wine-shops offering free medical treatment for victims of alcoholism may produce a different effect from that aimed at and by offering free treatment may encourage the people to use spirits. Thus instead of preventing excess in the drinking of vodka the advertisement may tend rather to its greater sale.

MAGGOTS IN CHEESE.

To the Editors of THE LANCET.

SIRS,—I desire to know if any harm can result from swallowing maggots or any other parasites in cheese. Is cheese containing maggots fit for human consumption?—I am, Sirs, yours faithfully,

A CONSTANT SUBSCRIBER.

AN INDIARUBBER FLESH RUBBER.

WE have received from Mr. H. A. Wanklyn a sample of his "Velvey" indiarubber flesh rubbers. This is made on the same principle as the well-known indiarubber "sponges," only it is of a rather firmer consistency. The rubber is very cleansing and decidedly pleasant to use. The manufacturer informs us that they can be obtained in various sizes from Messrs. Maw and other firms of a similar description.

Indicus.—1. Officers of the Indian Medical Service receive a consolidated sum in lieu of pay and allowances out of which they provide for their own accommodation and messing. If appointed to a regiment they usually join the regimental mess of the corps with which they are doing duty if unmarried. 2. As regards the passage out to India of junior married officers and their wives, application should be made to the Secretary of the Military Department, India Office, for the present regulations on the subject.

Diabetes.—Our correspondent will find a copious bibliography at the end of the articles on Diabetes Mellitus and Diabetes Insipidus by Dr. R. Saundby and the late Dr. Ralfe respectively in vol. iii. of Allbutt's "System of Medicine."

Anxious.—We do not know of any such asylum but we believe that some of the county asylums provide a certain amount of privacy for patients who can pay a small fee.

Dr. J. Dunlop.—Our correspondent will find advertisements dealing with the matter about which he writes on p. 9 and p. 69 of THE LANCET of Sept. 17th.

ERRATUM.—In an original article on the Visual Fields in Tobacco Amblyopia, by Mr. N. Bishop Harman, in THE LANCET of Sept. 17th, on page 821, column 2, the first word on line 1 should read *metres*, not millimetres.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 22nd, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 16	30·18	N.E.	...	105	69	54	54	55	Foggy
,, 17	30·21	E.	...	101	70	55	57	59	Fine
,, 18	30·29	S.E.	...	110	66	52	55	58	Fine
,, 19	30·26	S.E.	...	111	67	52	55	57	Fine
,, 20	30·23	S.E.	...	104	64	49	48	54	Fine
,, 21	30·18	E.	...	109	62	46	48	53	Fine
,, 22	30·03	N.E.	...	92	60	51	50	54	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (1st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Clinique. (Skin.)

TUESDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. R. Hutchison: Clinique. (Medical.)

WEDNESDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. T. P. Legg: Clinique. (Surgical.)

THURSDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

FRIDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Clinique. (Ear.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

During the week marked copies of the following newspapers have been received:—*Manchester Evening Chronicle, Master Printer and Newspaper Owner, Bolton Daily Chronicle, Westminster Gazette, Irish Times, Bexhill-on-Sea Observer, Spectator, East London Observer, Richmond Times, Christian Globe, Dublin Herald, Pall Mall Gazette, Morning Post, Morning Leader, Daily Chronicle, Times, British North Borneo Herald, Yorkshire Daily Observer, Liverpool Courier, South Wales Daily Echo, Cambridge Chronicle, &c.*

Communications, Letters, &c., have been received from—

A.—Mr. R. J. Albery, Lond.; Dr. Henry Ashby, Manchester; Anxious; Aberaman and District Workmen Doctor's Fund, Aberdare, Secretary of; Mr. E. W. Arnold, jun., Wellington, New Zealand; Ancoats Hospital, Manchester, Secretary of; Mr. F. H. Allen, Scunthorpe; A. R. H.; Apothecaries' Hall of Ireland, Dublin, Secretary of; Messrs. Allen and Hanburys, Lond.; Dr. D. W. Aitken, Lond.

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H.—Dr. R. Hutchison, Lond.; Mr. Percy Hardy, Dorchester; Mr. Edwin T. Hall, Lond.; Mr. H. Rider Haggard, Ditchingham; Mr. Otto Holst, Eastbourne.

I.—Incorporated Medical Practitioners' Association, Lond., General Secretary of; Indicus; *Indian Medical Record*, Calcutta, Manager of.

J.—Dr. W. Jamison, Fenton; Messrs. J. F. Jones and Co., Paris.

K.—Mr. A. Beresford Kingsford, Lond.; King's College, Lond., Dean of the Medical Faculty of; Captain F. Kiddle, R.A.M.C., Lond.; Messrs. R. A. Knight and Co., Lond.

L.—Dr. T. D. Luke, Edinburgh; London Hospital Medical College, Warden of; Mr. Lionel A. Labern, Southend-on-Sea; Leeds, Corporation of; Mr. R. F. Lang, Lond.; Leicester Infirmary, Secretary of.

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T.—Dr. J. A. Turner, Bombay; Mr. Edward Taylor, Lond.; T. J. D.

U.—University College, Lond., Secretary of.

V.—Vinolia Co., Lond.

W.—Mr. A. v. Wagner, Chemnitz; Mr. Arthur Wiglesworth, Liverpool; Messrs. J. Wiley and Sons, New York; Messrs. H. Wilson and Son, Lond.; Mr. J. H. White, Workington.

Letters, each with enclosure, are also acknowledged from—

A.—Messrs. Adlard and Son, Lond.; Mr. G. R. Anderson, Southport; A. J., Lond.; A. D.; A. L.; A. B.; Mr. F. G. Angear, Chatham; Mr. E. Arnold, Lond.; A. T. G.

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C.—Mr. J. J. Culmer, Nassau; Sir Halliday Croom, Edinburgh; Mr. J. J. Crowley, Donabate; C. M. L.; Clapton Nursing Home, Matron of; Dr. J. M. Chisholm, Liverpool; Mr. T. Culleton, Lond.; C. J. W.

D.—Dr. T. B. Dunn, Lond.; Down District Lunatic Asylum, Downpatrick, Clerk of; Messrs. Daube and Co., Frankfurt; Dr. W. H. Dawson, Beaumaris.

E.—Dr. E. Elsmere, Leominster; Ebbw Vale Workmen's Doctor Fund, Secretary of; E. J. C.

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I.—Miss Inge, Haslemere; Irish Exchange News, Dublin; Imperial Accident Insurance Co., Lond.

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